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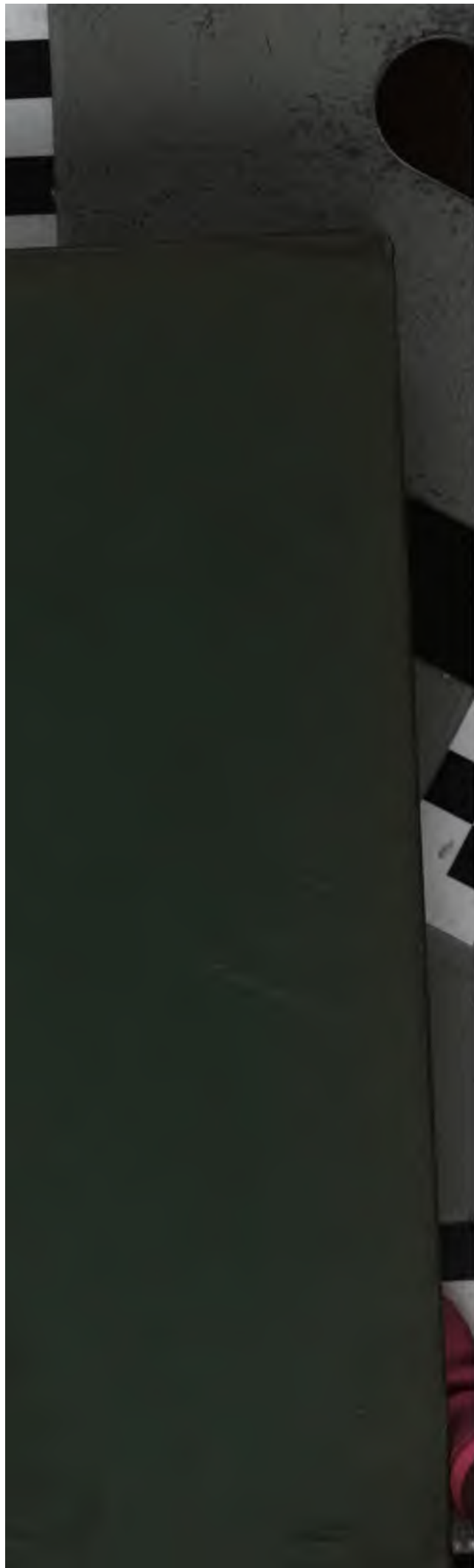
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TWENTY-FIFTH ANNUAL REPORT

RELATING TO THE

REGISTRY AND RETURN

OF

BIRTHS, MARRIAGES AND DEATHS

IN

MICHIGAN

FOR THE YEAR 1891

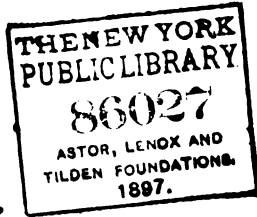
WITH A REVIEW OF THE RESULTS OF STATE REGISTRATION FOR
TWENTY-FIVE YEARS, 1867-1891

BY THE SECRETARY OF STATE OF THE STATE OF MICHIGAN



BY AUTHORITY

LANSING.
ROBERT SMITH & CO., STATE PRINTERS AND BINDERS
1891



AUTHORITY FOR PUBLICATION AND DISTRIBUTION OF VITAL STATISTICS REPORTS.

HOWELL'S ANNOTATED STATUTES, SUPPLEMENT 1883-1890, SECTIONS 26*g* AND 26*j*.

§ 26*g*. SEC. 7. That there shall be published a sufficient number of copies of the reports of the several officers, boards of officers, and public institutions of this State, now or hereafter required to make reports, not mentioned in sections eight, nine, ten and eleven of this act, and be bound together as joint documents of the fiscal or calendar year for which such reports are made, to supply the following persons, officers, libraries, corporations and societies, viz.: State officers and their deputies, ex-State officers, libraries of State officers, officers and libraries of State institutions, members and libraries of State boards, senators and representatives of this State in Congress, the United States senate library and the library of Congress, members of the legislature of the year for which said joint documents are published, justices of the supreme court, judges of the circuit courts, county clerks, county treasurers and judges of probate, public, free and incorporated libraries, public schools having a library, and publishers of newspapers published at that time in this State. That in addition to the foregoing there shall be published of said reports as joint documents, three hundred and fifty copies, one hundred copies of which shall be deposited in the State library for use in said library and for exchanges, and the remaining two hundred copies shall be deposited in the office of the Secretary of State to supply future demands.

§ 26*j*. SEC. 10. That a sufficient number of copies of the annual report of the Secretary of State on births, marriages and deaths shall be printed and bound for distribution, in the same manner as the joint documents; also a sufficient number to supply the officers making returns of births and deaths compiled in said report or their successors in office with one copy each, for depositing one hundred and fifty copies in the State library for use in said library and for exchanges, two hundred copies in the office of the Secretary of State as in the case of the joint documents and two hundred copies in the office of the State board of health for distribution by said board in their discretion.

LETTER OF TRANSMITTAL.

DEPARTMENT OF STATE,
OFFICE OF THE SECRETARY,
Lansing, Oct., 1893.

HON. JOHN T. RICH, *Governor of Michigan:*

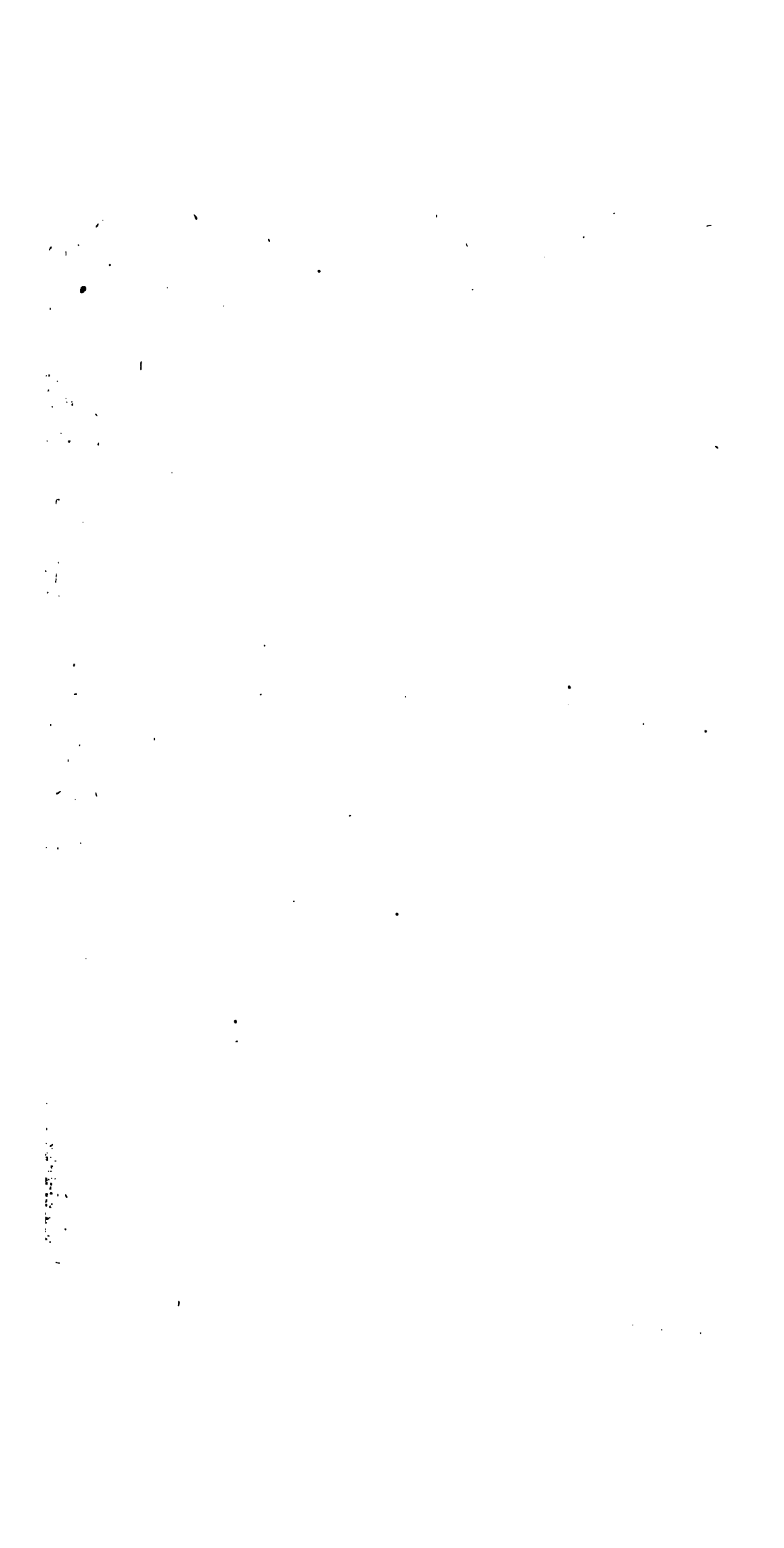
SIR—I herewith submit, according to the requirements of the law, the Twenty-fifth Annual Registration Report, embracing the statistics of the marriages, births and deaths returned as having occurred in Michigan during the year ending December 31, 1891.

This Report marks the close of a quarter of a century of State registration. It seemed eminently proper, therefore, to make a comparative study of the results of registration during previous years, and to observe in what degree the law, which has stood without amendment since 1869, was fulfilling its design. Such a survey leads to the conclusion that certain important changes are necessary in the law in order that more reliable statistics shall be obtained, and that they shall be obtained sufficiently early to be of greater practical interest and use. The points of deficiency in the operation of the present system, together with suggestions for its improvement, are presented in the Introductory Remarks immediately following.

The relative positions of communities in general advancement, and their consequent desirability as places of residence, are well defined by the attention paid to sanitary requirements. Vital Statistics, as an essential part of the system of public-health work, will not be neglected by the people of Michigan after their attention has been fully called to its necessities. Believing, therefore, that the time is opportune for a full discussion of the subject, I am,

Very respectfully,

JOHN W. JOCHIM,
Secretary of State.



INTRODUCTORY REMARKS.

The people may with justice require of a system of State registration of vital statistics—marriages, births and deaths—(1) that it shall accurately record the occurrence and preserve permanently and in accessible form the most important details relating to every marriage, birth and death that occurs in the State; (2) that the returns shall be statistically compiled in such a manner as to satisfy the demands of the people for *accurate* and *timely* information in regard to the vital phenomena of the State; and (3) that the data acquired at State expense shall be sufficiently complete and shall be so utilized as to assist in the solution of important questions relating to the sanitary condition of the State, and more especially to the occurrence, geographical distribution and the progress in methods of restriction of the important infectious diseases, such as small-pox, diphtheria, scarlet fever, measles, typhoid fever and, lastly, but more important than all as regards mortality, tuberculosis.

How far the present system of registration employed in Michigan fulfills these important functions will be briefly discussed:

(1) The importance of the State Registration Office as a depository of permanent records can scarcely be over-rated, and its value as such is increased with the passage of every year. There are now preserved in the vaults of the Department of State records of 343,257 marriages, 900,423 births and 373,834 deaths—a vast mass of data that frequently proves indispensable as evidence for the establishment of legal claims, pension allowances to the widows and children of deceased soldiers, and the like. It is to be regretted that only about one-half of the requests for information of a personal nature can be satisfactorily replied to owing to the fact that nearly as many births and deaths entirely fail of registration as are registered. The causes of this large deficiency are inherent in the present system, as explained elsewhere, and besides the failure in the matter of completeness of the records as such, many important statistical conclusions which have been drawn from the study of the returns are quite vitiated by the large percentage of omissions that must be allowed for or else more or less arbitrarily supplied.

(2) As regards accurate information of the vital changes in the State the present system of registration is, in many respects, but not in all, quite worthless. No birth-rates or death-rates have ever been recorded for the State that are at all comparable with the figures obtained in states where a system requiring the immediate registration of such events is in force. The reason for this lies chiefly in the fact that the enumeration of births and deaths is not made by the supervisors until nearly a year has elapsed, on the average, after the occurrence of the births and deaths recorded, in which interval there is no written record to preserve the facts as known at the time of their occurrence. Add to this the impossibility of obtaining proper corrections for the many faulty and incomplete returns, especially of causes of death, and it will be seen that the registration of vital statistics in this State is at present subject to many errors that ought to be removed if Michigan desires to retain an advanced position among the other States of the Union in this very important matter.

In the matter of timely publication of the vital statistics of the State, a very correct idea of the dilatory nature of the present system may be drawn from the date of appearance of the present Report, in which the facts relating to the occurrence of births, marriages and deaths in the State in the year ending December 31, 1891, are not ready for presentation to the public until after the middle of the second year following, 1893.* The book is old before it is born. It enters life laden with the decrepitude of age when it should be filled with facts of fresh and timely interest. The attention which the people of the State would naturally give to a record of their most important personal transactions—marriages, births and deaths—largely evaporates when it is known how remote is the period of time that the Report covers.

It is not to be inferred from the preceding remarks that the Registration Reports are ephemeral in their character, or dependent on the manner in which they satisfy a transient popular curiosity for their chief value. It is contended that, while in no wise failing in careful preparation and thorough scientific study of the many important sociological and medical questions involved in them, they could as well fulfill the desire of the people for early and reliable information upon these subjects. Were this Report for the year 1892 instead of being for the year previous, and had it been issued in March or April of the present year, as would be easily possible under an improved system of registration, there can be no question of the great difference in the amount of interest that would be excited by its appearance among the press and people.

* The present Report, having required much additional labor in presenting for comparison the results of registration in previous years, appears somewhat later than usual. All the remarks that follow, however, are true of the earliest date of publication—June of the second year after the occurrence of the facts registered.

The reason of the necessarily delayed appearance of the Registration Reports of each year may be seen in the following statement of the process of registration of a death under the present law. The course of registration of births is precisely similar. The law regulating the record of marriages is quite different (see Appendix) and since the provisions requiring the issue of a license by the county clerk and the making of a quarterly return by him to the Department of State, its operation has been entirely satisfactory. In all of the statements relating to the inadequacy of our present system of registration, reference applies exclusively to the registration of births and deaths.

OUTLINE OF THE REGISTRATION OF A DEATH UNDER THE PRESENT SYSTEM.

A death occurs.
(June, 1891.)

As an average example suppose the death to take place about the middle of the year. A much larger proportion of the deaths that occur in December are recorded than of those that occur in January.

1. The head of the family or other person cognizant of the facts remembers them until they are called for. Physicians may be called upon to certify to Cause of Death.

No person is required to furnish the facts in regard to a birth or death to the proper officer within a reasonable time after their occurrence, and when any data that may have been overlooked may be obtained. No written record is made until some time after the occurrence of death, and in that interval, from removal of the friends of the decedents, lapses of memory, etc., it is evident that many deaths entirely fail to be recorded while many returns are so imperfect as to be quite worthless.

2. The supervisor or assessor makes the enumeration.
(April or May, 1892.)

"It shall be the duty of each supervisor or assessor to obtain the facts in relation to births and deaths within his township, city, or any ward therein (not otherwise obtained), from the heads of families, the keepers, overseers or superintendents of asylums, hospitals, jails, prisons, work-houses, almshouses, houses of correction and similar institutions, the keepers of hotels, public and private boarding houses, and the masters or chief officers of steamboats and sail vessels navigating any of the waters of this State, and touching at any port of entry therein, in which such births or deaths occurred; and if either of the above named persons shall refuse to give such information then the same shall be obtained by such supervisor or assessor from any person having a knowledge of the facts in relation to such birth or death."—*Howell's Annotated Statutes, Section 865.*

3. The county clerk receives the schedules from the supervisors and assessors.
(June 1, 1892.)

The county clerk makes a copy of the supervisor's schedules and then a transcript of his copy which he sends to the State Department.

4. The Secretary of State receives the county clerk's transcript.
(September 1, 1892.)

The returns for the entire year have now to be compiled after the delay of several months for delinquent returns.

Registration Report.
(June, 1893.)

Two years have elapsed since the occurrence of the death. From one-third to one-half of the deaths that occurred in 1891 failed entirely to be recorded, and of the deaths recorded a large percentage was ascribed to indefinite or unspecified causes, making them quite valueless for statistical study.

(3) That the usefulness of the vital statistics collected by the State in the study of the sanitary conditions affecting its various localities, as well

as in the comparison of the efficiency of measures of restriction and prevention of infectious diseases in Michigan with those of other states, must depend largely upon the fulness and accuracy of our registration, cannot well be questioned. In the tables in the present Report that show the death-rates per 1,000 population for each county of the State (Exhibits F and G, pages 13 and 16; see also the Map opposite page 193), the deficiencies in the returns are very apparent. It is evident that no inferences can be drawn in regard to their comparative healthfulness on this account.

Again, when we endeavor to make any comparative study of certain diseases as causes of death in Michigan and in other states or countries having an efficient system of registration (see Table 77), a direct comparison is found to be quite impossible on account of the deficiency in the Michigan returns. It is immediately necessary to resort to conjecture—something that it is the prime object of the establishment of the system of State registration to render unnecessary.

It must not be inferred that the returns of deaths taken under the present registration law during the past twenty-five years possess no value. In the comparison of different years of registration with one another it may be assumed that the number of deaths omitted in each are in about the same proportion. So also in comparing the mortality from different causes of death a similar assumption can be made. Thus, on a reduced scale, the actual changes in vital conditions are represented in the registration returns, and very much of value may be obtained from their study in spite of their admitted imperfection. As an illustration of this see the instructive Diagram of "Lives saved by public-health work" in Michigan, prepared by the State Board of Health for the Columbian Exhibition, and which is reproduced in this Report (opposite page 257) by permission of the Secretary. This is based on the "Vital Statistics Reports" issued by the Department of State, and well shows how important correct registration returns are as criteria of the efficiency of public-health methods.

CAUSES OF DEFICIENCY IN REGISTRATION RETURNS UNDER THE PRESENT LAW.

A glance at the outline of the course of registration of a death under the present system will suggest at once many reasons for the present defective and incomplete returns. The point where the greatest amount of loss occurs is probably in the first step of registration. No person is especially charged with the preservation of the facts in relation to the decedent, and in the interval of nearly a year that elapses, on the average, before any written record is made, it is evident that many of them may be difficult or quite impossible to obtain at the time of the supervisor's enumeration.

The supervisor is also charged with other important business besides the

enumeration of births and deaths, and consequently he does not as a rule, nor can he be well expected to, exercise any particular discrimination in regard to the character of the returns, and especially in regard to that very important subject, the proper specification of the cause of death. In case of difficulty in making this return, the supervisors are permitted under the present law to obtain a physician's certificate of the cause of death; probably this is very seldom done. The matter is of sufficient importance both statistically and for the sake of correct personal records to require that the statement of the cause of death shall be based upon a physician's return in every case.

The transmission of the returns from the supervisors through the county clerks' offices is chiefly important as a source of unnecessary delay. Time must be given in which to make two copies, one to be retained at the county seat, the other to be sent to the Department of State, where, after compilation, it is preserved as a permanent record. Many errors are introduced in the process of copying the returns, requiring a large amount of correspondence each year for their correction; and what is most important of all their receipt at the central registration office is so delayed as to render it quite impracticable to obtain any corrections or additional information directly from the supervisors.

Lastly, the work of compilation of the returns when finally received at the Department of State, practically not until November 1 of the following year, must be undertaken for the entire returns of the year at once, and the issue of the Registration Report is not earlier than June of the second year following the year for which the returns are made. The disadvantage of this delay as regards popular interest in the vital statistics of the State has been already alluded to.

ESSENTIALS OF AN IMPROVED REGISTRATION SYSTEM.

It is easier to point out the very obvious defects of the present registration law than to suggest measures whereby a better registration may be obtained without the losses and inaccuracies that may be expected to occur in the transition from one system to another. It is desirable that no retrograde steps be taken, and it should be remembered that Michigan now possesses a system that, with all its deficiencies, is far better than that obtaining in some states. It would seem wiser to gradually change the operation of the registration law, using existing agencies as far as possible for the purpose of securing more correct returns, than to suddenly enact a more rigorous system that might prove even less satisfactory in practice than the present.

- (1) The law should designate the person whose duty it shall be to

furnish forthwith to the proper officer of registration the facts relating to the birth or death. The attending physician is evidently the person best qualified to state the cause of death. In the absence of medical attendance upon the deceased person, the house-holder or next of kin may be called upon to supply the facts. A return by some authorized person should be made an essential condition of the issue of a burial permit, without which no interment of the body of a deceased person or its removal from the State should be permitted to be made.

(2) A primary registration officer should be appointed for every locality whose duty should be to receive the certificates of death from physicians or other authorized persons and to issue burial permits. This duty could probably be best performed by the city, village or township clerks or by the clerks of city boards of health, as in Detroit at present.*

(3) A record should be kept at each office of immediate registration of the essential facts relating to each birth and death, and at the close of each month or quarter either a transcript of this record or, in the case of deaths, preferably the original certificates should be transmitted to the central registration office, there to be compiled and preserved permanently.

These principles could be carried out for a large portion of the State with very little legislation in addition to the present laws. Wherever a system of burial certificates is in operation, it would only be necessary to provide for the proper return of the deaths so collected to the State Department. Of the 2,093,889 inhabitants of Michigan in 1890, 646,296, or nearly one-third, were living in towns of over 4,000 population. If we could obtain an accurate and early registration of the cities only in Michigan, it would be a marked step in advance and would prepare the way for the gradual extension of a more perfect system of registration over the entire State.

The advantages that would be derived from the introduction of these improvements in the methods of registration are many and have already been incidentally mentioned to some extent in pointing out the defects of the present system. Thus, all the births and deaths that occur would be registered, and the statistical and legal value of the records be accordingly much greater than at present. The quality of the returns would show a marked improvement, and, in particular, there would be a great diminution in the number of deaths annually returned from unknown and unspeci-

* Detroit, as well as many other cities of the State, has in force under city ordinances a system of immediate registration of deaths, which are required to be certified to the office of the city health board prior to the issue of burial certificates. Dr. McLeod, Health Commissioner, writes that "In regard to death certificates, I will state that we always insist upon the cause of death being clearly and distinctly stated by the responding physicians. 'Heart failure,' 'debility,' etc., are never accepted as causes of death; in such cases the indirect cause must be given."

Under an act passed by the last legislature, Detroit has now in operation (1898) a system requiring all births to be returned to the office of the board of health within 48 hours after their occurrence. It would seem that we may now confidently expect some reliable statistics from this city which includes over a tenth of the entire population of the State.

fied causes. Lastly, the immediate return of deaths would permit the early issue to the public of information derived from them—perhaps in the form of monthly bulletins. It may readily be seen that a knowledge of the exact number of deaths that occurred in each locality of the State from different causes may be of the first importance to the local sanitary authorities, and would also be, in the event of the prevalence of a great epidemic like the long-expected visitation of Asiatic cholera, of the first public importance. The results obtained by the State registration at present are only of retrospective value to the State Board of Health, to which is intrusted the protection of the State against infectious diseases. They should be of immediate practical value to it in its work, and would be if all deaths, including those from infectious diseases, were required by law to be promptly reported to this office.

The direct return of the certificates of death to the central registration office is regarded as a very important feature of any proposed improvement in the registration of causes of death. Otherwise much of the advantage of a medical certificate will be lost. Experience shows that medical terms, when copied by persons entirely unfamiliar with them, are often rendered quite unintelligible. In case of indefinite or unsatisfactory returns correspondence can be had directly with the physicians who issued the certificates of death. Such a system is now in use in Minnesota and proves most satisfactory in practice, over 998 corrections having been made for the year 1891 in this way.*

FEATURES OF THE PRESENT REGISTRATION REPORT.

In its general arrangement and in the scope of its tabular discussions the present Report will be found substantially the same as those for the years preceding. Much of the value of statistical work depends on its continuity through a long series of years, and it has accordingly seemed desirable to retain many forms of tabular statement not of the greatest present importance with a view to their use in later work. It is believed that by means of the five-year averages employed in this Report that many of these tables may be represented in greatly condensed form in the future and thus space be reserved for more important matter.

Attention is especially called to the effort made to utilize some of the results of registration in previous years. Table 75 presents a comparative view of the mortality from each disease and from each class of diseases for each of the twenty-five years of registration. These facts are not otherwise accessible except by the laborious comparison of the Reports for the separate years. There is yet much work to be done upon this table in reconciling discrepancies due to varying methods of compilation, but it is

* Minn. Third Bienn. Rep. on Vital Statistics, p. 10.

believed that even in its rough state it will possess a certain value to those engaged in studying the changes in the prevalence of diseases.

Special attention has been necessarily given to the relations of Vital Statistics and Population. A series of estimated populations has been calculated for the years lying between the government censuses (see Part I.), and this affords a basis of comparison whereby the births, deaths or marriages of any year may be expressed in rates per thousand population and thus be compared with the rates for any other year. The mortality-rates from all diseases may also be reduced to similar expressions (for convenience the ratio 1: 100,000 is employed) and thus the statistics of Michigan become readily comparable with those of other states and countries. Such comparisons are very important, and may be regarded as an ultimate end of our State system of registration.

Lastly, a very important subject has not been entered upon in this Report except to the extent of a preliminary table (Exhibit H), designed to suggest the importance of its study. No statements have ever been given in these Reports of the births or deaths that occur in the cities of the State, except as the population of the cities is included in that of the various counties. The facts taken from the last census show that the urban population is increasing much faster in Michigan than the rural. The birth-rates and death-rates of our cities are probably markedly higher than that of the country surrounding them. It is time that some authentic information was given on this subject, and in the Report for 1892, now in preparation, an effort will be made to present certain details of importance in regard to the vital statistics of the cities of Michigan.

Throughout the work an effort has been made to have the primary numerical facts correctly stated. The secondary tables and calculations based upon these were regarded as of far less importance, since an error, if it be discovered, can be readily corrected. The text relating to the tables is, relatively, of less value since it is only possible to single out one or two salient facts in each table and briefly discuss them. If it shall contribute in any degree to the better understanding and usefulness of the tables, it will have fulfilled the entire purpose of the compiler. In its preparation considerable hindrance has been felt from the absence of a working library relating to vital statistics and general statistical methods. Some improvement has been made in this respect during the present year,* and the compiler is under special obligation to Dr. George E. Ranney for the loan of books from his library and to Dr. Henry B. Baker for the use of the library of the State Board of Health.

* Acknowledgment should be made to Hon. F. B. Stockbridge for United States Census publications; to Hon. John T. Rich for volumes of the State Geological Survey, now becoming rare; to Dr. Charles N. Hewitt, of Minnesota; Dr. E. M. Hunt, of New Jersey; Dr. C. A. Lindsley, of Connecticut; Dr. C. N. Metcalf, of Indiana; and Dr. J. R. Laine, of California, for Vital Statistics Reports of those States.

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NOTE ON EXPRESSION OF RATIOS.

All ratios, whether rates per hundred (per cents), per thousand or per hundred thousand, are stated to the first decimal place (tenths). They are necessarily calculated to the second decimal place (hundredths), the rule being to call .05 (or more) an additional .1 and to reject less than .05. The same rule is followed in quoting ratios from previous years in which hundredths are expressed.

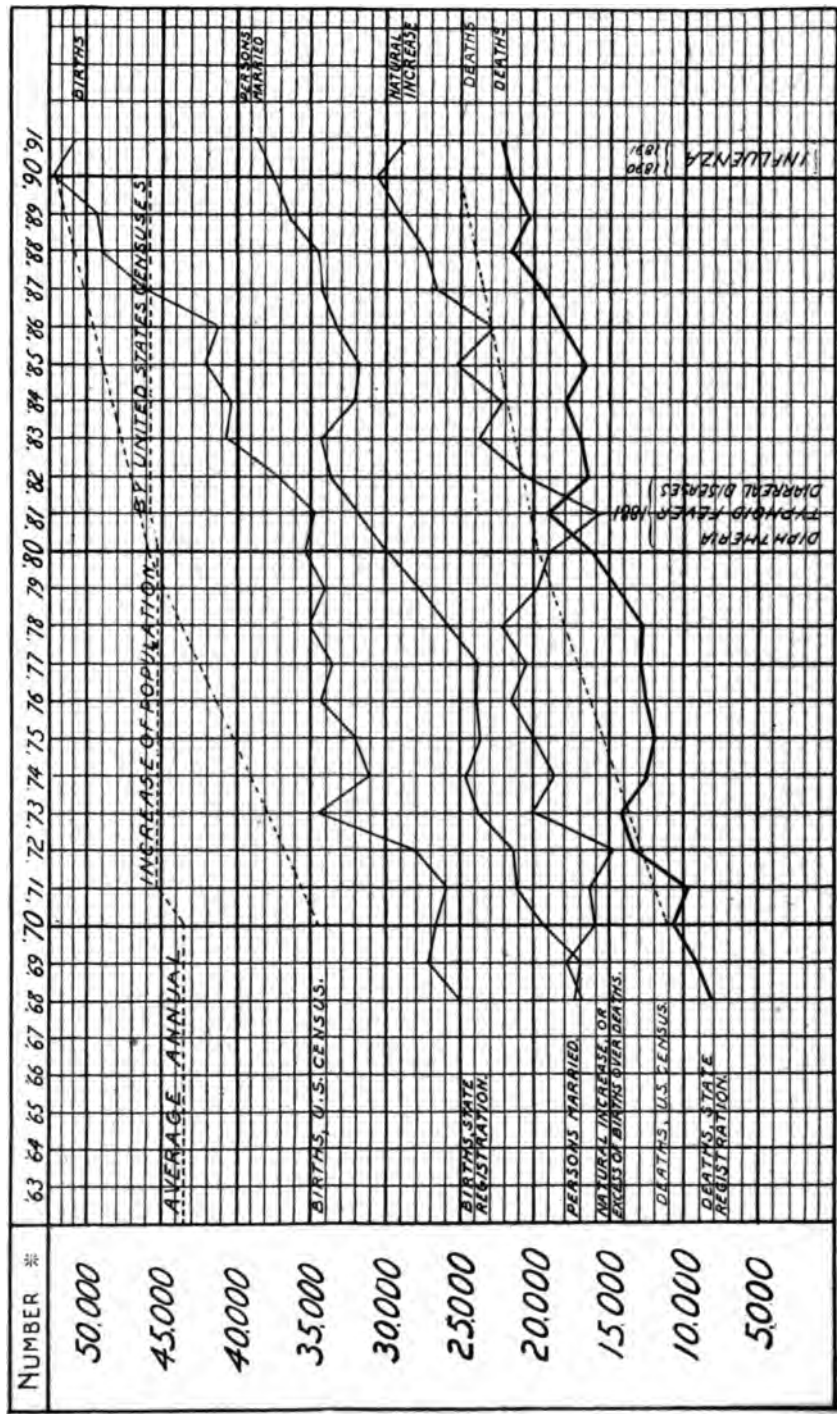
When a number is divided into parts, the relations of which are expressed as per cents of the total, it will often be found that the per cents of the several parts added together are slightly less or greater than 100.0 per cent—that is, if any uniform rule is followed in regard to fractional remainders. This is sometimes obviated by the process known as “forcing a balance” in which the fractional excess or deficiency is arbitrarily distributed in such a way that the apparent difficulty disappears. The matter is of little consequence, and is referred to only for the purpose of stating that such ratios are given as calculated, without adjustment, in the present Report.

ERRATA.

In Diagram I, p. 1, read *diarrheal* diseases. On p. 130, 4th line from bottom, read January, 1890. In Table 46, p. 133, read average of twelve years—1880–91, and excess of males, 1881, 7.0; 1887, 8.6; 1889, 8.4. In Table 59, p. 159, subtract 2,704 from the total, the number for St. Ignace being twice counted; this leaves the total 39,673, and, on p. 160, makes the total reporting population 2,054,216. It does not change the rate (10.6) on this page and on p. 127. On p. 185, second line of second paragraph, read 66.7 per 100,000. On p. 190, third line of second paragraph, read *of children and old people*. In foot-note, p. 227, read *modification*. In foot-note to Table 87, p. 306, read 4 deaths from “cough.” In heading of Exhibit on p. 307, read *twenty-three* years, 1869–91.



DIAGRAM 1-REGISTRATION OF VITAL STATISTICS IN MICHIGAN; 1868 - 1891.



* SCALE 1 CM. = 5000

TWENTY-FIFTH ANNUAL REGISTRATION REPORT OF MICHIGAN.

PART I.—VITAL STATISTICS AND POPULATION.

The subjects of vital statistics and population are intimately connected. To understand the manner in which the population of the State increases from one census to another it is necessary to study the several elements of growth, of which foreign immigration and natural increase are the most important. The term *natural increase*, or, *physiological increase*, of population is employed, semi-technically, in statistical discussions to denote the difference between the number of births and the number of deaths in a given time. It refers to what may be called the organic growth of a community in contradistinction to its increase from without, and this very important subject it is the province of vital statistics to study.

On the other hand no intelligent comprehension can be had of the data of vital statistics apart from their relations to the populations from which they are derived.

With full and accurate returns of marriages, births and deaths and equally exact information respecting the inhabitants of the State and the changes in their numbers and character from year to year, vital statistics would become far more of an exact science, and many of its conclusions, which, worked out with all possible pains so far as the present accuracy of the facts available will permit, are yet scarcely more than plausible conjectures, would become valuable and respected foundations for improvements in social conditions and advancement in hygienic and therapeutic practice.

It is needless to say that such conditions of ideal accuracy do not obtain in the comparisons of vital returns and population made in this part of the report. The rates for births and deaths are so absurdly low, as compared with any states or countries having a system of immediate record, that their value is greatly diminished for any purpose except that of pointing out the necessity of improvement in our present system of collection.

The reports for over twenty years have pleaded for such a change; nevertheless, the law under which the system was instituted in 1867, and which has stood without amendment since 1869, is still the law under which the annual registration is made. Imperfect as it is in its results, it remains the duty of the compiler to exhibit these results as perfectly as possible, and this has been done in this and the following por-

tions of this report more in the hope that the survey thus afforded of the imperfections of the system may lead to its early amendment than that the data given will prove especially valuable in itself.

In this division of the report it is designed to present a general comparison of the results of the enumeration of births, marriages and deaths for the year 1891. These subjects are treated more fully in Parts II, III and IV, in which the special tables and remarks pertaining to each may be found. In addition to the review of the statistics for the year 1891 presented here, it seemed desirable to make a general exhibition of the results of the state system of registration, which has now been in operation for a period of twenty-five years. Tables are given showing the number of births, marriages and deaths returned for each year from 1867 to 1891. In order to show more clearly the general relations of such yearly returns and to enable comparisons to be made between different years, a connected series of rates per 1,000 inhabitants, based on the figures of the successive United States censuses for census years and on careful estimates of populations for the intercensal years, has been calculated. In addition to this the direct results of the yearly returns have been charted, and, it is believed, an inspection of Diagram I will give a correct idea of the work accomplished under the present system of registration and show its relations to similar enumerations undertaken by the United States government, and to the growth of population which is so largely dependent on the relative numbers of births and deaths.

In order that a general idea may be obtained of the subjects discussed in the various exhibits of Part I., the following synopsis is presented:

Synopsis of exhibits showing the general results of registration of vital statistics in Michigan and their relation to population.

Exhibit.	Vital statistics and population.
A.	Marriages, births, deaths and natural increase of population in Michigan in 1891.
B.	Marriages, births, deaths and natural increase of population since the establishment of State registration, 1867-1891. (See Diagram I. for a graphic representation of the data of this exhibit.)
C.	Growth of the State as shown by comparison of the populations stated by different censuses.
D.	Estimated annual increase of population of Michigan for each year from 1851 to 1890. Comparison of different methods of estimation.
E.	Relation of registration returns to population, giving the number of persons married, births, deaths and natural increase per 1,000 inhabitants for each year of the period 1867-1891.
F.	Number of births, deaths and natural increase of population per 1,000 inhabitants for each county of the State in the year 1890.
G.	Number of births, deaths and natural increase of population per 1,000 inhabitants for each county of the State in the year 1891.
H.	Actual changes in population in each county of the State during the decade 1881-1890 according to the United States censuses, with a special showing of the changes in <i>country population</i> .
I.	Natural increase of population by months, 1888-91, and average for ten years, 1851-90.
J.	Comparison of natural increase of population with the increase by immigration, 1871-1891.
K.	Statement of the number of marriages, births, deaths and natural increase of population for each county of the State in 1891, with the number of inhabitants, by sex, in 1890.

Exhibit A gives a statement of the number of marriages, births, deaths and excess of births over deaths recorded for the year 1891. In order to make these numbers more easily comprehended, calculations are given of the average number of each returned for certain subdivisions of the year. Thus 53 marriages occurred, on the average, on every day of the year 1891 in various parts of the State. There were 139 children born and 60 deaths in the same time. The net daily increase of the population of the State, aside from the number added by immigration, was 79 persons.

EXHIBIT A.—*Number of marriages, births, deaths and excess of births over deaths in Michigan during the year 1891, with the average numbers for certain subdivisions of the year.*

Periods of time—1891.	Marriages, 1891.	Births, 1891.	Deaths, 1891.	Excess of births over deaths, 1891.
Total for year.....	19,231	50,812	22,079	28,733
Average number per quarter.....	4,808	12,708	5,520	7,188
Average number per month.....	1,602	4,234	1,840	2,394
Average number per week.....	369	977	425	552
Average number per day.....	53	139	60	79

Exhibit B furnishes a condensed view of the results actually obtained by the Michigan system of registration. The variations from year to year may be studied by comparison with the five-year averages stated in the table, or, better, by reference to Diagram I, where the figures of this table are graphically shown. Since 1868, which is the first year in which the enumeration of vital statistics may be considered fairly in operation, there is generally shown an increase, fairly uniform in amount, of each year over the one preceding. The number of marriages in 1891 exceeds the number returned for any previous year. The number of births is also higher than for any former year except 1890, for which year, as may be seen by referring to Part II, there was a large over-registration in Wayne county. The number of deaths returned is also larger than for any previous year.

The natural increase, or excess of births over deaths for the year 1891, is only exceeded by two years, 1889 and 1890, in the latter of which, as noted above, the unduly large number of births would cause the natural increase to be too high. The ratio of deaths to births for the year 1891 somewhat exceeds the average for the preceding five-year period.

VITAL STATISTICS OF MICHIGAN, 1891.

EXHIBIT B.—*Number of marriages, births and deaths registered in Michigan from 1867 to 1891: also the excess of births over deaths and the per cent of deaths to births for each year; the number of divorces from 1868 to 1896, the excess of marriages over divorces and the per cent of marriages to divorces. (All are compared with averages for the five-year periods, 1871-1875, 1876-1880, 1881-1885, 1886-1890.)*

Years.	Marriages and divorces.				Births and deaths.			
	Marriages.	Divorces.*	Per cent.	Excess of marriages over divorces.	Births.	Deaths.	Per cent.	Excess of births over deaths.
1867†	4,812				13,934	4,331		9,603
1868	8,697	509	5.9	8,188	25,020	8,235	32.9	16,785
1869	8,459	493	5.8	7,966	27,993	9,145	32.4	17,945
1870	9,791	554	5.7	9,237	26,663	10,766	40.4	15,897
1871	10,805	680	5.9	9,975	25,992	9,728	37.4	16,264
1872	10,752	620	5.8	10,132	27,993	13,371	47.8	14,622
1873	11,397	705	5.9	11,192	34,608	14,258	41.1	20,350
1874	12,255	794	6.5	11,461	31,151	12,500	40.1	18,651
1875	11,851	864	7.3	10,987	31,958	11,990	37.5	19,968
Average of 5 years, 1871-1875	11,472	723	6.3	10,749	30,340	12,369	40.8	17,971
1876	11,913	800	6.7	11,113	34,235	12,576	36.7	21,659
1877	11,899	927	7.8	10,972	33,395	12,919	38.7	20,476
1878	12,880	993	7.7	11,887	35,162	12,786	36.3	22,376
1879	13,392	1,110	8.0	12,782	34,122	14,407	42.2	19,715
1880	14,935	1,149	7.7	13,786	35,323	16,102	45.6	19,221
Average of 5 years, 1876-1880	13,104	996	7.6	12,108	34,447	13,754	39.9	20,693
1881	15,594	1,313	8.3	14,581	34,749	19,238	55.4	15,511
1882	16,330	1,335	7.9	15,495	37,026	16,425	44.4	20,601
1883	17,174	1,383	8.1	15,791	40,809	16,906	41.4	23,903
1884	15,939	1,239	7.7	14,750	40,408	18,056	44.4	22,352
1885	15,585	1,227	7.7	14,658	42,119	16,616	39.5	25,503
Average of 5 years, 1881-1885	16,354	1,300	7.9	15,055	39,022	17,454	45.1	21,568
1886	16,665	1,339	8.0	15,326	41,095	18,157	44.3	22,938
1887	17,179				46,226	19,482	42.1	26,744
1888	17,297				48,952	21,764	44.5	27,188
1889	18,317				49,272	20,315	41.2	28,957
1890	18,658				52,306	21,642	41.4	30,664
Average of 5 years, 1886-1890	17,600				47,570	20,278	42.7	27,292
1891	19,231				50,812	22,079	43.5	28,733
Total registration, 1867-1891	343,257				900,423	373,834	41.5	526,589

* From report of United States Labor Commissioner, 1889. Michigan collects no statistics concerning divorces.

† April 5 to December 31, 1867.

The column showing the number of divorces, which was quoted in the Michigan reports from 1887 to 1889, is again inserted to call attention to a most important class of vital statistics, the registration and tabulation of which is entirely omitted in this State. The figures presented are from the report made to Congress in 1889 after a special investigation by the United States Commissioner of Labor. By comparing the five-year averages it will be seen that the ratio of divorces to marriages is steadily increasing—from 6.3 per cent for 1871–1875 to 8.1 per cent for 1881–1885. The difference between the number of marriages and divorces shows the number of couples actually added each year to those living in marital relations and should be considered in studying the relations between marriage and birth rates.

COMPARISON WITH UNITED STATES CENSUS.

The dotted lines shown in the diagram represent the results of the United States census enumerations of vital statistics. The figures which they represent are as follows:

United States census returns.

Year of census.	Number of births.	Number of deaths.	Natural increase.
1870.....	34,530	11,182	23,348
1880.....	45,848	19,748	26,100
1890.....	51,931	25,016	26,915

As these enumerations take place once in ten years those portions of the curves between census years must be regarded only as representing estimates based on the assumption that the average annual increase between censuses is the increase for each year of the intercensal period. It will be shown under Exhibit D that this method of estimation is the most satisfactory for the conditions of increase of population obtaining in Michigan in recent years, and this also holds true in regard to vital returns. The State registration returns are less than the government returns (and average) for every year compared with three exceptions. There were more births reported by the supervisors to the Michigan State department in 1890 (52,306) than were obtained by the U. S. enumerators (51,931). Still-births are included in both cases, but the government figures were not obtained from direct enumeration of births but "by adding to the number of living population under one year of age at the end of the census year the number who were born and who died during the census year." *

The only other cases in which the State registration exceeds the average of the national censuses are the deaths of 1872 and 1873. The government figures must be considered in general more perfect than those obtained by the State. This is due largely to the fact that the U. S. census enumeration is made in June for the year ending June 1, that is the *year immediately preceding*. Births or death occurring in May are recorded in June, while the greatest interval is in births or deaths occurring in June of the year preceding. Here from eleven to twelve months elapse between the date of births or deaths and the date of record. The enumeration directed by the State law takes place from April 10 to June 1. Probably most of the work is done in May. The time covered is the *calendar year preceding*, so that the least interval between the occurrence of a

* J. H. Wardle, superintendent of census, in letter of April 26, 1893.

VITAL STATISTICS OF MICHIGAN, 1891.

birth or death (December) and its record (April) is over three months. A birth occurring in January, 1891, and recorded in May, 1892, represents an interval of sixteen months. The greater interval that comes in between the record and the fact recorded in the State returns is the principal cause of their falling below the U. S. census average.

It should be understood that both the Michigan and United States census enumerations of births and deaths are deficient, though in different degrees, from the same cause—the amounts of time that elapse between the dates of occurrence and record. What the true numbers of births and deaths are for each month and for each year can only be estimated. The “corrected” tables given in previous reports contain such estimates, but as the birth-rates and death-rates calculated upon them are generally lower than is usually accepted as probable, and as the whole subject needs much work to make the results of practical interest, the subject is not entered upon in this volume.

The relations of population to vital registration are so important that it seemed desirable to tabulate the results of the various census enumerations that have been made in Michigan. The United States censuses of the territory now constituting the State of Michigan extend from 1810 to 1890. The total population for each of these census years is stated in Exhibit C, together with the number of inhabitants gained over the preceding census and the ratio, expressed in per cents, of such gain to the number of inhabitants at the beginning of each decade.

EXHIBIT C.—*Populations of Michigan by the decennial national censuses from 1810 to 1890 and by the decennial state censuses from 1854 to 1884; showing the amount and per cent of increase of population between national censuses, between state censuses, and between national and state censuses.*

National and state censuses.	Population.	Increase of population during each decade by national census.		Increase of population during each decade by state census.		Increase of population during four and six year periods by national and state censuses.	
		Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
National census of 1810.....	4,762						
National census of 1820.....	8,765	4,003	84.06				
National census of 1830.....	31,639	22,874	260.97				
National census of 1840.....	212,267	180,628	570.90				
National census of 1850.....	397,654	185,387	87.34				
State census of 1854.....	507,521					109,867	27.63
National census of 1860.....	749,113	351,459	88.38			241,592	47.60
State census of 1864.....	803,661			296,140	58.34	54,548	7.28
National census of 1870.....	1,184,059	434,946	58.06			380,398	47.36
State census of 1874.....	1,331,081			530,370	65.99	149,972	12.64
National census of 1880.....	1,636,937	452,878	38.25			302,906	22.70
State census of 1884.....	1,853,658			519,627	38.95	216,721	13.24
National census of 1890.....	2,093,889	456,952	27.92			240,231	12.96

From the year 1860 to the present time the decennial per cents of increase of population show a constant decrease. This has been the case, though with less uniformity, in nearly all of the northern central states as grouped in the Compendium of the Eleventh Census, Part I, p. 4. The group consists of Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska and Kansas, and shows for the four decades per cents of 68.35, 42.70, 33.76 and 28.78, the last being the rate of increase from 1880 to 1890. Michigan is thus seen to have shown a rate of increase (27.92 per cent) but very little below the average for the group, while it exceeds the rate for the United States as a whole (24.86 per cent) for the period 1880-90. Considering the regular diminution of the numbers expressing the decennial rates of increase the question arises, whether some approximation to the probable rate for the present decade, 1890-1900, cannot be found. The numbers taken in order are so related that each one is very nearly the mean proportional of the two adjacent terms. Should this relation hold true for 1890-1900 the rate of increase would be about 20 per cent, or 2 per cent per annum, which number agrees fairly well with the method of estimation adopted from the study of the following exhibit.

In Exhibit D comparison is made of various methods of obtaining the annual increase of population for use in making an estimate of population in inter-census years. Between the average annual increments for different decades, as taken from the results of the United States censuses, there exists great uniformity. The average annual increase for 1871-1880 is only 407 less than that for 1881-1890. Indeed the average of the thirty years 1861-1890 is 44,825 or very nearly that of the last decade of this period. It would seem from this to be very clearly indicated that the population of the State as a whole is increasing at present by very nearly the same number every year, and that any populations estimated by the extension of the observed amount of increase a short period into the future, can be but slightly in error. The subject only becomes complicated when we take into consideration the State as well as the national censuses, and especially when an effort is made to base an average annual rate upon comparison of either a State or national census with the census, taken by different authorities and by different methods, next preceding. Thus, comparing the eleventh United States census taken in 1890 with the last Michigan State census, taken in 1884, the average annual increase for 1885-1890 would be 40,039 instead of the number obtained from the United States censuses of 1880 and 1890, or 45,695. This is over 14,000 below the average for 1881-1884 and shows clearly the impracticability of basing any estimates of population on a combination of the two censuses.

The last column of this table represents a method which has been employed to some extent for estimating populations between census years, and which, it has been claimed, gives more accurate results than the simple addition of the average annual increase for each year. It is assumed that the increase for each year depends on the population of the preceding year and that, consequently, the increase for the last year of an intercensal decade is considerably greater than that for the first year. The increase of population of the State from 1880 to 1890 was 456,952 or 27.92 per cent. If now the population in 1880 (1,636,937) be multiplied by 102.49 per cent, and the resulting product (the estimated population for 1881) be multiplied by the same constant multiplier, and go on through the decade, the last product so found agreeing with the census figures for 1890, we shall have a series of estimated populations, the differences between which for successive years will be the compound annual or geometrical increments given in the table. The geometrical rate of increase for each decade is easily found by

substituting in the following formula where p. c. is the rate per cent of increase for each year over the preceding year and P. C. the rate per cent of increase for the decade according to the censuses.

$$100 + p. c. = \sqrt[10]{100 + P. C.}$$

The results so obtained may be tabulated:

Year.	Population by U. S. census.	Increase during decade.	Per cent of increase for decade.	Per cent of increase per annum.
1850.....	397,654	-----	-----	-----
1860.....	749,113	351,459	88.38	6.54
1870.....	* 1,184,282	435,169	58.06	4.60
1880.....	1,636,937	452,655	28.21	2.29
1890.....	2,063,880	456,952	27.92	2.49

* According to the State count: the census bureau obtained 1,184,059. As the above figures were used in the computation and as the difference is small, they are allowed to stand unchanged though the government figures are employed elsewhere.

It is thus seen that the geometrical rate of increase has decreased from 6.54 per cent for 1850-60 to 2.49 per cent for 1880-90. It will probably not be far from 2 per cent during the present decade. The population of 1891, estimated by adding the average annual increase of the period 1880-90, corresponds to an increase of 2.14 per cent over that of 1890. Thus estimates by either method would be practically identical. For this reason, and also because the populations of the first and last years of adjacent census decades would show considerable differences, leading to unwarranted variations in the vital rates computed on them, it was not thought advisable to employ any geometrical estimates of population. The conditions of growth in the State are dependent on other factors than simple natural increase. The absolute increase for ten years, 1870-80, based on a population of 1,184,059, was very nearly as great as that for the period 1880-90, which had an initial population of 1,636,937. This is entirely contrary to the assumption that the amount of increase is proportional to population, and justifies the belief that the average annual increase is closer to the actual increase for each year.

VITAL STATISTICS AND POPULATION.

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EXHIBIT D.—Estimated annual increase of population in Michigan from 1851 to 1890, by various methods.

Year.	Average annual increase by national census decades.	Average annual increase by State census decades.	Average annual increase by four and six year periods.	Compound annual increase by national census decades.
1851.....	1851-1860: 35,146	1855-1864: 29,614	1851-1854: 27,468	25,960
1852.....				27,700
1853.....				29,510
1854.....				31,440
1855.....				33,480
1856.....			1855-1860: 40,265	35,710
1857.....				38,020
1858.....				40,500
1859.....				43,180
1860.....				46,000
1861.....	1861-1870: 43,495	1865-1874: 53,037	1861-1864: 13,637	48,140
1862.....				50,770
1863.....				53,510
1864.....				56,320
1865.....				59,200
1866.....			1865-1870: 63,437	62,180
1867.....				65,250
1868.....				68,470
1869.....				71,710
1870.....				75,060
1871.....	1871-1880: 45,288	1875-1884: 51,963	1871-1874: 37,437	78,560
1872.....				82,250
1873.....				86,060
1874.....				89,940
1875.....				93,850
1876.....			1875-1880: 50,475	97,770
1877.....				101,750
1878.....				105,870
1879.....				110,030
1880.....				114,220
1881.....	1881-1890: 45,695	1885-1894: 54,194	1881-1884: 54,194	118,460
1882.....				122,780
1883.....				127,180
1884.....				131,660
1885.....				136,200
1886.....			1885-1890: 40,039	140,800
1887.....				145,460
1888.....				150,180
1889.....				154,950
1890.....				159,780

VITAL STATISTICS OF MICHIGAN, 1891.

EXHIBIT E.—*Number of marriages, births and deaths registered in Michigan from 1867 to 1891, with the excess of births over deaths for each year; also the rates per thousand of persons married, births, deaths and excess of births over deaths for each year based on populations of United States censuses and estimated populations for intercensus years.*

Years.	Population.	Michigan registration returns, 1867-1891.				Rates per thousand of population.			
		Number of marriages.	Number of births.	Number of deaths.	Excess of births over deaths.	Persons married.	Births.	Deaths.	Excess of births over deaths.
1867*	1,053,574	4,312	13,934	4,331	9,603				
1868	1,097,069	8,897	25,020	8,235	16,785	15.9	22.8	7.5	15.3
1869	1,140,564	8,459	27,093	9,145	17,948	14.8	23.8	8.0	15.7
1870	1,184,058	9,791	26,663	10,766	15,897	16.5	22.5	9.1	13.4
1871	1,229,347	10,805	25,992	9,728	16,264	17.2	21.1	7.9	13.2
1872	1,274,684	10,752	27,993	13,371	14,622	16.9	21.9	10.5	11.4
1873	1,319,923	11,897	34,608	14,258	20,350	18.0	26.2	10.8	15.4
1874	1,365,211	12,255	31,151	12,500	18,651	17.8	22.8	9.1	13.6
1875	1,410,499	11,851	31,968	11,990	19,968	16.8	22.6	8.5	14.1
1876	1,455,787	11,913	34,235	12,576	21,659	16.8	23.5	8.6	14.9
1877	1,501,075	11,699	33,896	12,919	20,476	15.8	22.3	8.6	13.6
1878	1,546,363	12,880	35,162	12,766	22,396	16.6	22.7	8.2	14.5
1879	1,591,650	13,692	34,122	14,407	19,715	17.5	21.4	9.0	12.4
1880	1,636,987	14,935	35,323	16,102	19,221	18.2	21.5	9.8	11.7
1881	1,682,632	15,894	34,749	19,238	15,511	18.8	20.6	11.4	9.2
1882	1,728,327	16,830	37,026	16,425	20,601	19.4	21.4	9.5	11.9
1883	1,774,022	17,174	40,809	16,906	23,903	19.3	23.0	9.5	13.5
1884	1,819,717	15,969	40,408	18,056	22,352	17.5	22.2	9.9	12.3
1885	1,865,412	15,885	42,119	16,646	25,473	17.0	22.6	8.9	13.6
1886	1,911,107	16,665	41,095	18,187	22,908	17.4	21.5	9.5	12.0
1887	1,956,802	17,179	46,226	19,482	26,744	17.5	23.6	9.9	13.7
1888	2,002,497	17,297	48,952	21,764	27,188	17.3	24.4	10.8	13.6
1889	2,048,192	18,816	49,272	20,315	28,957	17.8	24.0	9.9	14.1
1890	2,093,389	18,577	52,306	21,642	30,664	17.7	25.0	10.3	14.6
1891	2,139,584	19,281	50,812	22,079	28,733	17.9	23.7	10.3	13.4

* Includes only April 5 to December 31, 1867. This was the first year of state registration, and the returns are not comparable with later years when the system was fully established.

In Exhibit E the comparison of registration returns to population can be seen for each year from 1868 to 1891. The marriage rate is higher for 1891 than for seven years preceding. No rise is to be noted in consequence of the law which went into effect September 27, 1887, and which required quarterly returns of marriages by the county clerk to the Secretary of State instead of the annual reports required under the old law. It would seem that the principal benefit of the present law is in its affording more timely returns, the number of "previous years" being greatly diminished as shown in Part III, and that little gain is to be noted in the total number ultimately recorded.

The birth rate for 1891, 23.7, is the exact average for the preceding five years. It is exceeded only by the rates for 1888-90 and 1873. The death rate is the same as for 1890, 10.3, and is slightly greater than the average for 1886-90, which is 10.1. Both 1890 and 1891 are marked by the prevalence of an epidemic of influenza, commonly called "la grippe," and it is to be expected that the mortality for several years will show the effect of its presence. A fuller discussion of the causes of death affecting the series of death rates in this table will be found in the latter part of this report. It is to be noted that, despite the presence of a wide-spread epidemic in the two years, 1890, 1891 and the causation of a large number of deaths not only directly, but, to even greater degree, indirectly thereby, the death rates have risen only in slight degree. They are exceeded by those of 1888, 1881, 1872 and 1873. It would seem that, apart from the special mortality consequent on influenza, that the public health was in an excellent condition for these years.

Few comparisons can be made with any satisfaction with the vital rates of other, states or countries. Wherever the births or deaths are registered immediately upon their occurrence, their number, and, consequently, the birth rates and death rates, are so largely increased over any statistics obtained from our tardy and defective system, that any comparison is quite out of the question. Thus in Massachusetts,* a state of but slightly greater population than Michigan, parents and householders are required by law to give notice to the town and city clerks of births and deaths, and, in addition, all physicians and midwives are obliged to make a report on or before the fifth day of each month of all children at whose births they were present. The result is that in 1890 there were registered 59,876 births in Massachusetts, and 45,627 deaths.† While the number of births recorded is not largely in excess of the Michigan registration for that year, the number of deaths is over twice as great. The birth and death rates for Massachusetts for that year are 26.7 and 20.4 against 25.0 and 10.3 for Michigan. While the death rate is probably actually higher in Massachusetts than in Michigan, it certainly does not exceed it to such a degree. A fair estimate of the death rate of Michigan is about 17 per 1,000, corresponding to about 35,500 deaths in 1890. The number is about 66 per cent greater than the number actually returned and, if correct, only about 3 deaths out of 5 are at present properly recorded. The United States census returns are also deficient, though in less degree. They are as follows for the last three census years:

Births and deaths in Michigan by U. S. censuses.

Year.	Popula- tion.	U. S. census returns.			Rates per 1,000.		
		Births.	Deaths.	Natural increase.	Births.	Deaths.	Natural increase.
1870.....	1,184,059	34,580	11,182	23,348	29.2	9.4	19.7
1880.....	1,636,937	45,848	19,743	26,100	28.0	12.1	15.9
1890.....	2,093,889	51,931	25,016	26,915	24.8	11.9	12.9

* Population 2,238,948 in 1890; Michigan had 2,093,889 inhabitants, 145,054 less.

† Still-births included in both births and deaths.

The following averages for some important European countries are calculated from figures given in the 52d annual report of the Registrar-General of England. They enable some very interesting comparisons to be made, with due allowance for the incompleteness of the Michigan rates for births and deaths.

Average marriage, birth and death rates for certain European countries for the ten year period 1880-89.

Country.	Rate per 1,000 inhabitants.		
	Persons married.	Births.	Deaths.
Great Britain.....	13.7	31.3	18.9
Denmark.....	14.9	31.2	18.8
Norway.....	13.0	30.7	16.8
Sweden*.....	12.7	29.5	17.1
Austria.....	15.6	38.1	29.6
Hungary*.....	19.6	44.2	33.3
Germany.....	14.5	37.0	25.3
Holland.....	14.0	34.5	21.2
Belgium.....	13.9	30.2	20.5
France.....	14.8	24.2	22.0
Italy.....	15.6	37.1	27.3

* 1879-88.

The number of persons married in Michigan per 1,000 inhabitants is seen to be higher than in any of the countries in the list, with the exception of Hungary. The birth rates show great variation ranging from 24.2 for France to 44.2 for Hungary. It is impossible to assign the correct place of Michigan in the scale either of births or deaths. There has never been a satisfactory registration of vital statistics in the State, nor will there be until some plan is adopted whereby births and deaths shall be registered at the earliest practicable moment after their occurrence. If the work of registration of vital statistics is worth doing at all, and there seems to be no difference of opinion on this head among modern civilized communities, it is certainly worth doing well—at least well enough so that the results obtained shall have a face value which will not have to be immediately depreciated by reference to “incompleteness of returns” in every use of them which it is attempted to make.

Exhibits F and G state the number of births, deaths and excess of births over deaths, together with the rate of each per 1,000 of population, for each county of the State. In Exhibit F the population is that of the U. S. census of 1890, comparison being made directly with the vital statistics of that year. In Exhibit G the population of each county is estimated for the year 1891, the number of inhabitants given by the census for 1890 being increased or diminished by the amount of the average annual gain or loss as shown in Exhibit H. The rates for the year 1890 are, in general, to be taken as the more authoritative, being based on enumerated, not estimated, populations. The registration returns were, unfortunately, very defective for the State outside of Wayne county in 1890, while excessive for Detroit, and so in many cases the 1891 rates more nearly correspond to the facts.

VITAL STATISTICS AND POPULATION.

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EXHIBIT F.—*Number of births and deaths, and excess of births over deaths, registered in Michigan for the year 1890, by counties, with rates per thousand based on population stated by United States census of 1890.*

Counties.	Population by United States census of 1890.	Number of births registered for 1890.	Number of deaths registered for 1890.	Excess of births over deaths in 1890.	Birth rate per thousand of population, 1890.	Death rate per thousand of population, 1890.	Rate of natural increase per thousand of population, 1890.
State	2,093,889	52,306	21,642	30,664	25.0	10.8	14.6
Alcona	5,409	105	15	90	19.4	2.8	16.6
Alger	1,288	18	8	10	14.5	6.5	8.0
Allegan	38,961	618	299	319	15.9	7.7	8.3
Alpena	15,581	316	114	202	20.2	7.3	12.9
Antrim	10,413	174	58	116	16.7	5.6	11.1
Arenac	5,683	134	41	93	23.6	7.2	16.4
Baraga	3,036	87	43	44	28.7	14.2	14.5
Barry	23,783	384	158	226	16.1	6.7	9.4
Bay	56,412	1,581	493	1,088	28.0	8.7	19.3
Benzie	5,237	107	59	48	20.4	11.3	9.1
Berrien	41,285	699	343	356	16.9	8.3	8.6
Branch	26,791	361	284	77	13.5	10.7	2.8
Calhoun	43,501	502	343	249	13.6	7.9	5.7
Cass	20,953	312	170	142	14.9	8.1	6.8
Charlevoix	9,686	163	77	86	16.8	7.9	8.9
Cheboygan	11,986	319	97	222	26.6	8.1	18.5
Chippewa	12,019	208	67	141	17.3	5.6	11.7
Clare	7,558	114	47	67	15.0	6.2	8.8
Clinton	26,509	476	234	242	17.9	8.8	9.1
Crawford	2,962	47	16	31	15.9	5.4	10.5
Delta	15,330	472	151	321	30.7	9.8	20.9
Dickinson a							
Eaton	32,094	435	287	148	13.6	8.9	4.7
Emmet	8,750	104	63	36	11.9	7.3	4.1
Genesee	39,430	479	301	178	12.1	7.6	4.5
Gladwin	4,208	18	3	15	4.3	0.7	3.6
Gogebic	13,166	227	85	142	17.2	6.5	10.7
G'd Traverse	13,355	207	85	122	15.5	6.4	9.1
Gratiot	23,668	407	159	248	14.2	5.5	8.7
Hillsdale	30,660	349	280	69	11.4	9.1	2.3

a Not organized in 1890.

EXHIBIT F.—Continued.

Counties.	Population by United States census of 1890.	Number of births registered for 1890.	Number of deaths registered for 1890.	Excess of births over deaths in 1890.	Birth rate per thousand of population, 1890.	Death rate per thousand of population, 1890.	Rate of natural increase per thousand of population, 1890.
Houghton	35,389	1,279	326	953	36.1	9.2	26.9
Huron	28,545	738	227	511	25.9	8.0	17.9
Ingham	37,666	596	373	222	15.8	9.9	5.9
Ionia	32,801	433	243	190	13.2	7.4	5.8
Iosco	15,224	305	129	176	20.0	8.4	11.6
Iron a.	4,432						
Isabella	18,784	447	147	300	23.8	7.8	16.0
Ile Royal a.	185						
Jackson	45,031	586	467	119	13.0	10.3	2.7
Kalamazoo	39,273	632	413	219	16.1	10.5	5.6
Kalkaska	5,160	78	28	50	15.1	5.4	9.7
Kent	109,922	2,414	1,314	1,100	22.0	12.0	10.0
Keweenaw	2,894	113	45	68	39.0	15.5	23.5
Lake	6,505	41	16	25	6.3	2.5	3.8
Lapeer	29,213	432	201	231	14.8	6.9	7.9
Leelanau	7,944	214	6*	146	26.9	8.6	18.3
Lenawee	48,448	600	447	153	12.4	9.2	3.2
Livingston	20,858	269	130	139	12.9	6.2	6.7
Luce	2,455	48	2	46	19.6	0.8	18.8
Mackinac	7,880	94	18	76	12.0	2.3	9.7
Macomb	31,813	609	324	285	19.1	10.2	8.9
Manistee	24,230	668	241	427	27.5	9.9	17.6
Manitou	860	15	2	13	17.4	2.3	15.1
Marquette	39,521	1,234	488	746	31.2	12.3	18.9
Mason	16,335	424	119	305	25.9	7.3	18.6
Mecosta	19,697	346	147	199	17.6	7.4	10.2
Menominee	33,639	1,148	312	836	34.1	9.2	24.9
Midland	10,637	164	78	111	17.3	6.8	10.5
Missaukee	5,048	157	54	103	31.1	10.7	20.4
Monroe	32,337	632	274	358	19.5	8.5	11.0
Montcalm	32,637	521	236	285	15.9	7.2	8.7
Montmorency	1,487	37	5	32	24.9	3.4	21.5
Muskegon	40,013	1,026	436	590	25.6	10.9	14.7
Newaygo	20,476	347	120	227	16.9	5.8	11.1
Oakland	41,245	506	394	111	12.2	9.6	2.6
Oceana	15,698	250	101	149	15.9	6.4	9.5
Ogemaw	5,583	89	34	54	15.8	6.0	9.8

* No returns in 1890.

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EXHIBIT F.—*Concluded.*

Counties.	Population by United States census of 1890.	Number of births registered for 1890.	Number of deaths registered for 1890.	Excess of births over deaths in 1890.	Birth rate per thousand of popula- tion, 1890.	Death rate per thousand of popula- tion, 1890.	Rate of natural increase per thousand of population, 1890.
Ontonagon	3,756	64	27	37	17.0	7.2	9.8
Oscoda	14,690	866	127	239	25.0	8.7	16.3
Oscoda	1,904	20	5	15	10.5	2.6	7.9
Otsego	4,272	45	32	13	10.5	7.5	3.0
Ottawa	35,358	846	330	516	23.9	9.3	14.6
Presque Isle	4,687	117	27	90	25.0	5.8	19.2
Rosecommon	2,033	37	10	27	18.2	4.9	13.3
Saginaw	82,273	2,028	1,032	996	24.6	12.5	12.1
Sanilac	32,589	741	229	512	22.7	7.0	15.7
Schoolcraft	5,818	60	44	16	10.3	7.6	2.7
Shiawassee	30,952	835	209	176	12.3	6.7	5.6
St. Clair	52,105	989	449	540	19.0	8.6	10.4
St. Joseph	25,856	374	262	112	14.8	10.3	4.5
Tuscola	32,508	541	250	291	16.6	7.7	8.9
Van Buren	30,541	522	314	208	17.0	10.2	6.8
Washtenaw	42,210	546	378	168	12.9	9.0	3.9
Wayne	257,114	17,372	5,505	11,867	67.5	21.4	46.1
Wexford	11,278	231	73	158	20.5	6.5	14.0

EXHIBIT G.—*Number of births and deaths, and excess of births over deaths, registered in Michigan for the year 1891, by counties, with rates per thousand based on population stated by United States census of 1890 increased by the average annual increment of the decade 1881-1890.*

Counties.	Estimated population of Michigan for 1891.	Number of births registered for 1891.	Number of deaths registered for 1891.	Excess of births over deaths in 1891.	Birth rate per thousand of estimated population, 1891.	Death rate per thousand of estimated population, 1891.	Rate of natural increase per thousand of estimated population, 1891.
State	2,139,584	50,812	22,079	28,733	23.7	10.3	13.4
Alcona	5,639	83	25	58	14.7	4.4	10.3
Alger	1,293	10	2	8	7.7	1.5	6.1
Allegan	39,076	752	455	297	19.2	11.6	7.6
Alpena	16,260	508	150	353	30.9	9.2	21.7
Antrim	10,931	230	76	154	21.0	7.0	14.1
Arenac	5,958	135	31	104	22.7	5.2	17.5
Baraga	3,159	96	38	58	30.4	12.0	18.4
Barry	23,690	394	181	213	16.7	7.7	9.0
Bay	58,538	1,637	584	1,103	28.0	9.1	18.8
Benzie	5,417	138	58	80	25.5	10.7	14.8
Berrien	41,735	565	322	243	13.5	7.7	5.8
Branch	26,676	426	261	165	16.0	9.8	6.2
Calhoun	44,006	605	355	250	13.7	8.1	5.2
Cass	20,848	297	151	146	14.2	7.2	7.0
Charlevoix	10,143	162	73	89	16.0	7.1	8.8
Cheboygan	12,532	285	90	195	22.7	7.3	15.6
Chippewa	12,696	226	79	147	17.8	6.2	11.6
Clair	7,895	157	61	96	19.9	7.7	12.2
Clinton	26,850	473	215	255	18.0	8.3	9.7
Crawford	3,142	50	9	41	15.9	2.9	13.0
Delta	16,182	427	172	255	26.4	10.6	15.8
Dickinson *	15,936	557	224	333	35.0	14.1	20.9
Eaton	32,181	475	334	141	14.8	10.4	4.4
Emmet	8,968	132	117	15	14.7	13.0	1.7
Genesee	39,451	585	384	201	14.8	9.7	5.1
Gladwin	4,516	19	6	13	4.2	1.3	2.9
Gogebic	14,463	501	232	269	34.6	16.0	18.6
Gd. Traverse	13,548	296	164	132	21.4	11.8	9.5
Gratiot	29,341	486	201	285	16.6	6.9	9.7
Hilledale	30,454	394	291	103	12.9	9.6	3.4

VITAL STATISTICS AND POPULATION.

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EXHIBIT G.—Continued.

Counties.	Estimated population of Michigan for 1891.	Number of births registered for 1891.	Number of deaths registered for 1891.	Excess of births over deaths in 1891.	Birth rate per thousand of estimated population, 1891.	Death rate per thousand of estimated population, 1891.	Rate of natural increase per thousand of estimated population, 1891.
Houghton	36,681	1,530	490	1,040	41.7	13.4	28.4
Huron	29,391	792	217	575	26.9	7.4	19.6
Ingham	88,065	601	407	194	15.8	10.7	5.1
Ionia	32,694	531	235	296	16.2	7.2	9.1
Iosco	16,059	319	149	170	19.9	9.3	10.6
Iron * a	4,420						
Isabella	19,447	389	161	228	20.0	8.3	11.7
Isle Royal a	143						
Jackson	45,331	602	408	199	13.3	8.9	4.4
Kalamazoo	39,796	748	446	302	18.8	11.2	7.6
Kalkaska	5,382	126	56	70	23.4	10.4	13.0
Kent	113,589	2,349	1,239	1,110	20.6	10.9	9.7
Keweenaw	2,757	134	75	59	48.6	27.2	21.4
Lake	6,832	86	19	67	12.6	2.8	9.8
Lapeer	29,120	470	223	247	16.1	7.7	8.5
Leelanau	8,113	197	62	135	24.3	7.6	16.6
Lenawee	48,459	708	465	243	14.6	9.6	5.0
Livingston	20,719	315	194	121	15.2	9.3	5.8
Luce	2,701	58	9	49	21.5	3.3	18.1
Mackinac	8,323	79	17	58	8.4	2.0	6.4
Macomb	31,832	587	334	253	18.4	10.5	7.9
Manistee	25,400	627	288	339	24.7	11.3	13.3
Manitou	813	12	10	2	14.8	12.3	2.5
Marquette*	39,963	1,244	608	636	31.6	16.2	15.4
Mason	17,017	418	178	240	24.6	10.5	14.1
Mecosta	20,269	380	163	217	18.7	8.0	10.7
Menominee *	21,894	554	144	410	25.3	6.6	18.7
Midland	11,033	238	98	140	21.6	8.9	12.7
Missaukee	5,398	147	41	106	27.2	7.6	19.6
Monroe	32,209	737	307	430	22.9	9.5	13.4
Montcalm	32,586	596	251	345	18.3	7.7	10.6
Montmorency	1,686	18	7	11	11.0	4.3	6.7
Muskegon	41,356	1,064	432	632	25.7	10.4	15.3
Newaygo	21,055	374	139	235	17.8	6.6	11.1
Oakland	41,216	513	399	114	12.4	9.7	2.8
Oceana	16,098	295	131	164	18.3	8.1	10.2
Ogemaw	5,953	105	29	76	17.6	4.9	12.8
Ontonagon	3,875	61	20	41	15.7	5.2	10.6

a No returns for 1891.

EXHIBIT G.—*Concluded.*

Counties.	Estimated population of Michigan for 1891.	Number of births registered for 1891.	Number of deaths registered for 1891.	Excess of births over deaths in 1891.	Birth rate per thousand of estimated population, 1891.	Death rate per thousand of estimated population, 1891.	Rate of natural increase per thousand of estimated population, 1891.
Oscoda	15,015	346	135	211	23.0	9.0	14.1
Oscoda	2,048	34	6	28	16.6	2.9	13.7
Otsego	4,502	67	41	26	14.8	9.1	5.8
Ottawa	45,581	841	316	525	28.6	8.9	14.8
Presque Isle	4,844	122	41	81	25.2	8.5	16.7
Roscommon	2,090	25	6	19	12.0	2.9	9.1
Saginaw	84,591	2,010	931	1,079	23.7	11.0	12.8
Sanilac	38,214	777	269	508	23.4	8.1	15.3
Schoolcraft	6,311	97	32	65	15.4	5.1	10.3
Shiawassee	31,341	434	194	240	13.8	6.2	7.7
St. Clair	52,696	1,124	530	594	21.3	10.1	11.3
St. Joseph	25,229	365	274	91	14.4	10.9	3.6
Tuscola	33,185	558	221	337	16.8	6.7	10.2
Van Buren	30,515	452	276	176	14.8	9.0	5.8
Washtenaw	42,246	534	401	133	12.6	9.5	3.1
Wayne	266,181	13,632	4,594	9,038	51.2	17.3	34.0
Wexford	11,724	303	72	231	25.8	6.1	19.7

* Dickinson county was organized August 1, 1891, and was formed from portions of Iron, Marquette and Menominee counties. The populations of the portions detached, so far as could be ascertained from the census of 1890, were as follows:

From Iron county, Felch township	414
From Menominee county, Breen, Breitung, Norway townships, Iron Mountain city	13,069
Total from Iron and Menominee counties	13,483

Accepting the statement of the Michigan State Manual, 1893, p. 315, which places the population of Dickinson county in 1890 at 15,000, there would remain to be added from Marquette county, 1,517.

This population of 15,000 in 1890 is increased by the average annual increments of the several constituents as taken from the three counties to give the estimated population used as a basis for the statements of birth and death rates in Exhibit G. Corresponding deductions are made in the estimated numbers for Iron, Marquette and Menominee counties.

RELATIVE INCREASE OF CITY AND RURAL POPULATION, 1881-1890.

Exhibit II is based upon figures presented by the last government census. It is regarded as important to know, in the study of the vital statistics of the several counties of the State from year to year, what has been the actual net result or summation of such elements of growth during the period of years just passed in which the total amount of growth can be accurately known. An important factor of increase of population is at present excluded. The amount of immigration, or, rather, the balance of migration—the excess of immigrants over emigrants—is not known. Some attempt to approximate to it may be seen in Exhibit I, where the difference between the average annual increase and the natural increase for each year from 1871 to 1891 is stated.

Besides the increase of population of the State as a whole due to the excess of births over deaths and the excess of immigrants over emigrants, there are other alterations going on of an extensive character affecting the distribution of the population within the State. The most prominent feature of this internal migration is the rapid growth of cities and towns and the much slower growth, even in many cases the absolute decrease, of the rural population of the State. These changes are best seen in the lower half of the lower peninsula, the oldest and most thickly settled portion of the State and containing two-thirds of the entire population. While some of the cities in this region exhibit remarkable growth, the country population is either actually decreasing or increasing at a rate below the average for the State.

In 1890 the city population (including in this class all cities having a population of 4,000 or over in 1890) constituted somewhat less than one-third of the total population of the State. This element has shown in the decade 1881-90 a rate of increase amounting to over 70 per cent. The rural population, over two-thirds of the total inhabitants in 1890, has increased only about 15 per cent in that time. In absolute numbers the cities increased 266,326 while the country increased 190,626, leaving a difference of 75,700 in favor of the cities in the ten years. The facts in detail concerning the rates of these changes for different counties and group of counties may be seen in the schedules *d* to *i* forming part of Exhibit H. The phenomena considered in this exhibit, so far as regards decrease of total or rural population for certain parts of the State are not to be considered as at all alarming in their nature or as peculiar to Michigan among the states.

In considering Exhibit C it was seen that the rate of increase of population has been decreasing for every decade of the census enumerations. An absolute decrease of population, including inhabitants of both town and country, is seen to have occurred in 15 counties of the State (column *a*, Exhibit II) from 1880 to 1890. Study of the map appearing in extra bulletin No. 1 of the eleventh census shows that such changes occurred in nearly all of the northern and western states. In most of them greater areas were affected than in Michigan. This is true of New York, Ohio, Indiana, Illinois, Iowa and Wisconsin. Rural depopulation prevails in nearly all the countries of western Europe and in the older states of this country. The low prices of grain, due to the large production of the western plains, make agriculture less remunerative in this State than formerly. It has been true of every section of country, that as farming becomes less profitable owing to the development of western lands a transition of industry from agriculture to manufacturing takes place. This change is now operating largely in southern and middle Michigan. Those communities appear most prosperous and show the largest increase of population in which manufacturing interests have already been considerably developed. In those which yet remain almost entirely agricultural in character the drain of inhabitants to other localities either in the State or outside is very apparent.

VITAL STATISTICS OF MICHIGAN, 1891,

EXHIBIT H.—*Comparison of the populations of Michigan by the national censuses decrease: (a) total population; (b) city population (cities having a population over 4,000 in 1890)*

State and counties.	a Total population.				
	1890.	1880.	Difference.	Per cent.	
				Gain.	Loss.
State	2,094,889	1,636,937	456,952	27.92	-----
Alcona	5,409	3,107	2,302	74.09	-----
Alger	1,238	690	548	79.42	-----
Allegan	38,961	37,815	1,146	3.03	-----
Alpena	15,581	8,789	6,792	77.28	-----
Antrim	10,413	5,237	5,176	98.84	-----
Arenac	5,638	2,931	2,752	98.69	-----
Baraga	3,086	1,804	1,232	68.29	-----
Barry	23,783	23,317	a 1,584	-----	6.06
Bay	56,412	35,150	21,262	60.49	-----
Benzie	5,237	3,433	1,804	52.55	-----
Berrien	41,235	36,785	4,500	12.23	-----
Branch	26,791	27,941	a 1,150	-----	4.12
Calhoun	43,501	38,452	5,049	13.13	-----
Cass	20,933	22,009	a 1,066	-----	4.80
Charlevoix	9,636	5,115	4,571	89.86	-----
Cheboygan	11,986	6,524	5,462	83.72	-----
Chippewa	12,019	5,248	6,771	129.02	-----
Clare	7,558	4,187	3,371	80.51	-----
Clinton	26,509	28,100	a 1,591	-----	5.66
Crawford	2,962	1,139	1,803	155.04	-----
Delta	15,830	6,812	8,518	125.04	-----
Dickinson b	-----	-----	-----	-----	-----
Eaton	32,094	31,225	869	2.78	-----
Emmet	8,756	6,639	2,117	31.89	-----
Genesee	39,430	39,220	210	0.54	-----
Gladwin	4,208	1,127	3,081	273.38	-----
Gogebic	13,166	-----	13,166	-----	-----
Grand Traverse	13,355	8,422	4,933	58.57	-----
Gratiot	28,668	21,936	6,732	30.69	-----

a Decrease.

b Not organized in 1890.

VITAL STATISTICS AND POPULATION.

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of 1880 and 1890, by counties; showing the amount and percentage of increase or over 4,000 in 1890) by counties; (c) country population (cities having a population deducted) by counties.

b Population of cities over 4,000 in 1890.					c Country population (cities over 4,000 in 1890 deducted).				
1890.	1880.	Difference.	Per cent.		1890.	1880.	Difference.	Per cent.	
			Gain.	Loss.				Gain.	Loss.
646,296	379,970	266,326	70.09		1,447,598	1,256,967	190,631	15.17	
					5,409	3,107	2,302	74.09	
					1,288	690	548	79.42	
					38,961	37,815	1,146	3.08	
11,283	6,153	5,130	83.87		4,298	2,636	1,662	63.51	
					10,413	5,237	5,176	98.84	
					5,688	2,931	2,752	93.89	
					3,036	1,804	1,232	68.29	
					23,783	25,817	a 1,534		6.06
40,820	27,090	13,730	50.68		15,592	8,060	7,532	93.45	
					5,237	3,433	1,804	52.55	
4,197	4,197				37,068	32,588	4,500	13.81	
5,247	4,681	566	12.09		21,544	23,200	a 1,716		7.38
13,197	7,063	6,134	86.85		30,304	31,889	a 1,085		3.45
					20,953	22,009	a 1,056		4.50
					9,686	5,115	4,571	89.86	
					11,986	6,524	5,462	83.72	
5,760	1,947	3,813	195.84		6,259	3,301	2,958	89.61	
					7,558	4,187	3,371	80.51	
					26,509	28,100	a 1,591		5.66
					2,962	1,159	1,803	155.04	
6,808	3,026	3,782	124.96		8,522	3,786	4,736	125.09	
					32,094	31,225	869	2.78	
					8,756	6,639	2,117	31.89	
9,303	8,409	1,894	16.58		29,627	30,811	a 1,184		3.84
					4,208	1,127	3,081	273.88	
7,745		7,745			5,421		5,421		
4,353	1,897	2,456	129.47		9,002	6,525	2,477	37.96	
					28,668	21,936	6,732	30.69	

a Decrease.

VITAL STATISTICS OF MICHIGAN, 1891.

EXHIBIT H.—Continued.

Counties.	a Total population.				
	1890.	1880.	Difference.	Per cent.	
				Gain.	Loss.
Hillsdale	30,660	32,723	a 2,063	-----	6.80
Houghton	35,389	22,473	12,916	57.47	-----
Huron	23,545	20,089	8,456	42.09	-----
Ingham	37,666	33,676	3,990	11.85	-----
Ionia	32,801	33,372	a 1,071	-----	3.16
Iosco	15,224	6,373	8,351	121.50	-----
Iron	4,432	-----	4,432	-----	-----
Isabella	18,794	12,159	6,625	54.49	-----
Iale Royal	135	55	80	145.45	-----
Jackson	45,031	42,081	3,000	7.14	-----
Kalamazoo	39,273	34,342	4,931	14.36	-----
Kalkaska	5,160	2,937	2,223	75.09	-----
Kent	109,922	78,253	36,669	50.06	-----
Keweenaw	2,394	4,270	a 1,376	-----	33.23
Lake	6,505	3,238	3,372	101.31	-----
Lapeer	29,213	30,138	a 925	-----	3.07
Leelanau	7,944	6,253	1,691	27.04	-----
Lenawee	43,448	43,348	105	0.23	-----
Livingston	20,358	22,251	a 1,893	-----	6.26
Luce	2,455	-----	2,455	-----	-----
Mackinac	7,830	2,902	4,928	169.31	-----
Macomb	31,813	31,627	186	0.59	-----
Manistee	24,230	12,532	11,698	93.35	-----
Manitou	800	1,334	a 474	-----	35.53
Marquette	39,521	25,394	14,127	55.63	-----
Mason	16,385	10,065	6,320	63.79	-----
Mecosta	19,697	13,973	5,724	40.96	-----
Menominee	33,639	11,997	21,652	180.63	-----
Midland	10,637	6,893	3,744	54.61	-----
Missaukee	5,048	1,553	3,495	225.05	-----
Monroe	32,337	33,624	a 1,287	-----	3.83
Montcalm	32,637	33,148	a 511	-----	1.54
Montmorency	1,487	-----	1,487	-----	-----
Muskegon	40,013	26,536	13,427	50.50	-----
Newaygo	20,476	14,693	5,783	39.41	-----

a Decrease.

VITAL STATISTICS AND POPULATION.

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EXHIBIT H.—Continued.

b Population of cities over 4,000 in 1890.					c Country population (cities over 4,000 in 1890 deducted).				
1890.	1880.	Difference.	Per cent.		1890.	1880.	Difference.	Per cent.	
			Gain.	Loss.				Gain.	Loss.
-----	-----	-----	-----	-----	30,660	32,723	a 2,063	-----	6.30
-----	-----	-----	-----	-----	35,389	22,473	12,916	57.47	-----
-----	-----	-----	-----	-----	28,545	20,089	8,456	42.09	-----
13,102	8,319	4,783	57.49	-----	24,564	25,367	a 793	-----	3.12
4,483	4,190	293	6.97	-----	28,319	29,682	a 1,363	-----	4.59
4,328	1,328	3,000	225.90	-----	10,896	5,545	5,351	95.41	-----
-----	-----	-----	-----	-----	4,432	-----	4,432	-----	-----
-----	-----	-----	-----	-----	18,784	12,159	6,625	54.49	-----
-----	-----	-----	-----	-----	135	55	80	145.45	-----
a 20,798	16,105	4,693	29.14	-----	24,233	25,926	a 1,693	-----	6.92
17,853	11,987	5,916	49.56	-----	21,420	22,405	a 985	-----	4.39
-----	-----	-----	-----	-----	5,160	2,937	2,223	75.69	-----
60,278	32,016	28,262	88.27	-----	49,644	41,237	8,407	20.88	-----
-----	-----	-----	-----	-----	2,894	4,270	a 1,376	-----	33.22
-----	-----	-----	-----	-----	6,505	3,233	3,272	101.21	-----
-----	-----	-----	-----	-----	29,213	30,128	a 925	-----	3.07
-----	-----	-----	-----	-----	7,944	6,253	1,691	27.04	-----
8,756	7,349	907	11.56	-----	39,692	40,494	a 802	-----	1.96
-----	-----	-----	-----	-----	20,858	22,251	a 1,393	-----	6.26
-----	-----	-----	-----	-----	2,455	-----	2,455	-----	-----
-----	-----	-----	-----	-----	7,830	2,902	4,928	169.81	-----
4,748	3,067	1,691	55.32	-----	27,065	23,570	a 1,505	-----	5.27
12,312	6,930	5,382	84.88	-----	11,418	5,602	5,816	108.82	-----
-----	-----	-----	-----	-----	880	1,334	a 474	35.53	-----
26,368	14,660	11,708	79.86	-----	13,153	10,734	2,419	22.44	-----
7,517	4,190	3,327	79.40	-----	8,868	5,875	2,993	50.94	-----
5,308	3,552	1,751	49.30	-----	14,394	10,421	3,973	38.12	-----
19,229	3,288	15,941	484.21	-----	14,410	8,699	5,711	64.50	-----
-----	-----	-----	-----	-----	10,657	6,893	3,764	54.61	-----
-----	-----	-----	-----	-----	5,048	1,553	3,495	225.05	-----
5,258	4,980	328	6.65	-----	27,079	23,694	a 1,615	-----	5.63
-----	-----	-----	-----	-----	32,637	33,143	a 511	-----	1.54
-----	-----	-----	-----	-----	1,487	-----	1,487	-----	-----
22,702	11,262	11,440	101.58	-----	17,311	15,324	1,987	12.96	-----
-----	-----	-----	-----	-----	20,476	14,688	5,788	39.41	-----

a Decrease.

EXHIBIT H.—*Continued.*

Counties.	a Total population.				
	1880.	1890.	Difference.	Per cent.	
				Gain.	Loss.
Oakland	41,245	41,537	a 292	-----	0.70
Oceana	15,698	11,609	3,999	34.18	-----
Ogemaw	5,538	1,914	3,669	191.69	-----
Ontonagon	3,756	2,565	1,191	46.43	-----
Oscoda	14,630	10,777	3,853	35.75	-----
Oscoda	1,904	467	1,437	307.71	-----
Otsego	4,272	1,974	2,298	116.41	-----
Ottawa	35,358	33,126	2,232	6.74	-----
Presque Isle	4,637	3,113	1,524	50.56	-----
Rosecommon	2,033	1,459	574	39.34	-----
Saginaw	82,273	59,095	23,178	39.23	-----
Sanilac	32,589	26,341	6,248	23.73	-----
Schoolcraft	5,818	885	4,933	557.40	-----
Shiawassee	30,962	27,069	3,893	14.39	-----
St. Clair	52,105	46,197	5,908	12.79	-----
St. Joseph	25,356	26,626	a 1,270	-----	4.77
Tuscola	32,508	25,738	6,770	26.30	-----
Van Buren	30,541	30,307	a 234	-----	0.86
Washtenaw	42,210	41,848	362	0.87	-----
Wayne	257,114	166,444	90,670	54.47	-----
Wexford	11,278	6,915	4,463	65.49	-----

a Decrease.

VITAL STATISTICS AND POPULATION.

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EXHIBIT H.—Continued.

b Population of cities over 4,000 in 1890.					c Country population (cities over 4,000 in 1890 deducted).				
1890.	1890.	Difference.	Per cent.		1890.	1890.	Difference.	Per cent.	
			Gain.	Loss.				Gain.	Loss.
6,200	4,509	1,691	37.50	-----	35,045	37,023	a 1,983	-----	5.65
-----	-----	-----	-----	-----	15,698	11,699	3,999	34.18	-----
-----	-----	-----	-----	-----	5,583	1,914	3,669	191.69	-----
-----	-----	-----	-----	-----	3,756	2,565	1,191	46.43	-----
-----	-----	-----	-----	-----	14,630	10,777	3,853	35.75	-----
-----	-----	-----	-----	-----	1,904	467	1,437	307.71	-----
-----	-----	-----	-----	-----	4,272	1,974	2,298	116.41	-----
5,023	4,862	161	3.31	-----	30,335	28,264	2,071	7.32	-----
-----	-----	-----	-----	-----	4,687	3,113	1,574	50.56	-----
-----	-----	-----	-----	-----	2,083	1,459	574	39.34	-----
46,332	29,541	16,781	56.81	-----	35,951	29,554	6,397	21.65	-----
-----	-----	-----	-----	-----	32,589	26,311	6,248	23.72	-----
-----	-----	-----	-----	-----	5,818	885	4,933	557.40	-----
6,564	2,501	4,063	162.46	-----	24,398	24,558	a 170	-----	.07
13,543	8,883	4,660	52.46	-----	28,562	37,314	1,243	3.34	-----
-----	-----	-----	-----	-----	25,356	26,626	a 1,270	-----	4.77
-----	-----	-----	-----	-----	32,506	25,783	6,770	26.30	-----
-----	-----	-----	-----	-----	30,541	30,807	a 266	-----	.86
15,560	13,045	2,515	19.23	-----	26,650	28,808	a 2,153	-----	7.47
205,376	116,340	89,036	76.96	-----	51,238	50,104	1,134	2.26	-----
4,461	2,213	2,248	101.53	-----	6,817	4,602	2,215	48.13	-----

a Decrease.

EXHIBIT H.—Continued.—(d) Counties showing a decrease of country population.

Counties.	d Country population decreasing.			
	1890.	1880.	Decrease.	Per cent of loss.
Twenty-four counties	604,194	633,700	29,506	4.66
Barry.....	23,783	25,317	1,534	6.06
Branch	21,544	23,260	1,716	7.38
Calhoun.....	30,304	31,389	1,085	3.45
Cass.....	20,953	22,009	1,056	4.50
Clinton.....	26,509	28,100	1,591	5.66
Genesee.....	29,627	30,811	1,184	3.94
Hilldale.....	30,660	32,723	2,063	6.30
Ingham.....	24,564	25,357	793	3.12
Ionia.....	28,319	29,632	1,363	4.59
Jackson.....	24,233	25,926	1,693	6.92
Kalamazoo	21,420	22,405	985	4.39
Keweenaw.....	2,894	4,270	1,376	32.22
Lapeer.....	29,213	30,188	925	3.07
Lenawee.....	39,692	40,494	802	1.96
Livingston.....	20,858	22,251	1,393	6.26
Macomb.....	27,065	28,570	1,505	5.27
Manitou	866	1,334	474	35.53
Monroe	27,079	28,694	1,615	5.63
Moncalm	32,637	33,148	511	1.54
Oakland	35,045	37,028	1,983	5.65
Shiawassee.....	24,328	24,558	170	.07
St. Joseph.....	25,356	26,626	1,270	4.77
Van Buren.....	30,541	30,807	266	.86
Washtenaw.....	26,650	28,808	2,158	7.47

EXHIBIT H.—Continued.—(e) Counties showing an increase of country population from 0 to 25 per cent.

Counties.	Country population increasing from 0 to 25 per cent in decade.			
	1880.	1890.	Increase.	Per cent of gain.
Eleven counties.....	376,926	340,500	36,426	10.70
Allegan.....	33,961	37,815	1,146	3.03
Berrien.....	37,088	32,588	4,500	13.81
Eaton.....	32,094	31,225	869	2.78
Kent.....	49,644	41,237	8,407	20.33
Marquette.....	13,153	10,734	2,419	22.44
Muskegon.....	17,311	15,324	1,987	12.96
Ottawa.....	30,835	28,264	2,071	7.32
Saginaw.....	35,951	29,554	6,397	22.10
Sanilac.....	32,589	26,341	6,248	23.72
St. Clair.....	38,562	37,314	1,248	3.34
Wayne.....	51,238	50,104	1,134	2.26

EXHIBIT H.—Continued.—(f) Counties showing an increase of country population from 25 to 50 per cent.

Counties.	Country population increasing from 25 to 50 per cent in decade.			
	1880.	1890.	Increase.	Per cent of gain.
Thirteen counties.....	196,227	143,391	49,836	34.76
Emmet.....	8,756	6,639	2,117	31.89
Grand Traverse.....	9,002	6,525	2,477	37.96
Gratiot.....	28,668	21,936	6,732	30.69
Huron.....	28,545	20,069	8,456	42.09
Leelanau.....	7,944	6,253	1,691	27.04
Macosta.....	14,394	10,421	3,973	34.12
Newaygo.....	20,476	14,668	5,788	39.41
Oceana.....	15,668	11,699	3,969	34.18
Ontonagon.....	3,756	2,565	1,191	46.48
Oscoda.....	14,680	10,777	3,853	35.75
Rosecommon.....	2,033	1,459	574	39.84
Tuscola.....	32,508	25,733	6,770	26.30
Wexford.....	6,817	4,602	2,215	48.13

EXHIBIT H.—Continued.—(g) *Counties showing an increase of country population from 50 to 75 per cent.*

Counties.	Country population increasing from 50 to 75 per cent in decade.			
	1890.	1880.	Increase.	Per cent of gain.
Ten counties.....	110,775	70,192	40,583	57.82
Alcona.....	5,409	3,107	2,302	74.09
Alpena.....	4,296	2,636	1,662	63.51
Baraga.....	3,086	1,804	1,282	68.29
Benzie.....	5,237	3,438	1,804	52.55
Houghton.....	35,389	22,473	12,916	57.47
Isabella.....	18,784	12,159	6,625	54.49
Mason.....	8,668	5,875	2,993	50.94
Menominee.....	14,410	8,699	5,711	64.50
Midland.....	10,657	6,893	3,764	54.61
Presque Isle.....	4,687	3,118	1,574	50.56

EXHIBIT H.—Continued.—(h) *Counties showing an increase of country population from 75 to 100 per cent.*

Counties.	Country population increasing from 75 to 100 per cent in decade.			
	1890.	1880.	Increase.	Per cent of gain.
Ten counties.....	84,471	44,527	39,944	89.71
Alger.....	1,288	690	548	79.43
Antrim.....	10,413	5,237	5,176	98.84
Arenac.....	5,633	2,981	2,752	93.99
Bay.....	15,592	8,060	7,532	93.45
Charlevoix.....	9,686	5,115	4,571	89.36
Cheboygan.....	11,986	6,524	5,462	88.73
Chippewa.....	6,259	3,301	2,958	89.61
Claire.....	7,558	4,187	3,371	80.51
Iosco.....	10,896	5,545	5,351	96.41
Kalamazoo.....	5,160	2,987	2,223	75.69

EXHIBIT H.—*Concluded.*—(i) *Counties showing an increase of country population over 100 per cent.*

Counties.	Country population increasing over 100 per cent in decade.			
	1890.	1880.	Increase.	Per cent of gain.
Sixteen counties.....	78,000	24,657	53,343	216.34
Crawford.....	2,982	1,159	1,803	155.04
Delta.....	8,522	3,786	4,736	125.09
Gladwin.....	4,206	1,127	3,081	273.38
Gogebic a.....	5,421			
Iron a.....	4,432			
Isle Royal.....	135	55	80	145.45
Lake.....	6,505	3,238	3,272	101.21
Luce.....	2,455			
Mackinac.....	7,890	2,902	4,928	169.81
Manistee.....	11,418	5,602	5,816	103.82
Missaukee.....	5,048	1,553	3,495	225.05
Montmorency.....	1,487			
Ogemaw.....	5,583	1,914	3,669	191.69
Oscoda.....	1,904	467	1,437	307.71
Otsego.....	4,272	1,974	2,298	116.41
Schoolcraft.....	5,818	885	4,933	557.40

a Not organized in 1880.

The number of births, deaths and physiological increase of population is shown for each month of certain recent years in Exhibit I. The excess of births over deaths is greatest for the month of May, both in 1891 and in the ten year average, 1881-1890.

The figures presented in Exhibit J must be taken with much allowance, as the statements for individual years can only be considered estimates, made, however, as carefully as the data at our disposal will permit. For the twenty years 1871-1890 the State gained in population 909,830. The registration returns for that time indicated a natural increase of 437,623, leaving a remainder of 472,207 persons to be otherwise accounted for. The registration returns are certainly deficient in enumerating all of the births and deaths that occur in the State during any year. The returns of births are probably, so far as can be judged from a comparison of the State and government birth and death enumerations in census years, more nearly correct than those of deaths. The figures given for the natural increase are, therefore, more nearly correct than if the births and deaths were deficient in equal ratios. Could the true amount of the natural increase be found it would probably considerably exceed the amount of increase from immigration in the twenty years. In the two decades compared the State is seen to have changed from the list of those states growing chiefly by the addition of new inhabitants from outside its borders to the list of states growing chiefly by internal increase.

EXHIBIT 1.—Number of births, deaths and excess of births over deaths registered in Michigan for the years 1886 to 1891, by months, with the average excess of births for the decade 1881-1890.

	Total.	Months.												Unk. ^a
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	
1886														
(Births.....)	41,935	2,617	2,558	3,456	8,640	3,498	3,852	8,568	8,781	8,707	3,540	3,270	3,727	51
(Deaths.....)	18,187	1,085	1,098	1,462	1,996	1,876	1,281	1,461	1,887	1,859	1,761	1,615	1,841	60
(Excess of births.....)	22,998	1,532	1,765	1,994	2,244	2,122	2,071	2,187	1,594	1,818	1,779	1,655	1,886	-9
1887														
(Births.....)	46,226	8,182	8,150	8,987	3,686	8,960	8,666	4,011	4,266	4,331	8,944	3,765	4,088	60
(Deaths.....)	10,482	1,219	1,274	1,535	1,569	1,472	1,405	1,915	2,055	1,916	1,699	1,554	1,743	66
(Excess of births.....)	26,744	1,883	1,876	2,452	2,297	2,488	2,261	2,066	2,211	2,415	2,245	2,211	2,315	-6
1888														
(Births.....)	48,952	3,531	3,516	4,099	3,953	4,214	4,138	4,223	4,514	4,415	4,805	3,811	4,108	45
(Deaths.....)	21,764	1,416	1,555	1,945	1,969	1,858	1,627	1,799	2,169	1,978	1,948	1,642	2,012	66
(Excess of births.....)	27,188	2,115	1,981	2,234	2,014	2,356	2,506	2,434	2,345	2,437	2,857	2,169	2,151	-21
1889														
(Births.....)	49,272	8,840	8,101	4,001	4,067	4,298	4,050	4,282	4,526	4,882	4,292	4,331	4,646	53
(Deaths.....)	20,315	1,409	1,266	1,676	1,565	1,454	1,899	1,677	2,214	2,025	1,891	1,712	1,951	63
(Excess of births.....)	28,957	1,931	1,895	2,325	2,472	2,784	2,661	2,575	2,312	2,857	2,398	2,619	2,695	-10
1890														
(Births.....)	52,306	4,180	8,718	4,356	4,407	4,568	4,813	4,897	4,651	4,517	4,319	4,233	4,765	42
(Deaths.....)	21,612	1,745	1,569	1,776	1,807	1,704	1,633	1,819	2,082	1,892	1,808	1,789	2,027	31
(Excess of births.....)	30,664	2,365	2,119	2,580	2,600	2,864	2,680	2,548	2,619	2,625	2,411	2,454	2,738	11
1891														
(Births.....)	50,812	3,629	3,534	4,345	4,236	4,465	4,078	4,293	4,703	4,646	4,340	4,098	4,391	53
(Deaths.....)	22,079	1,486	1,385	1,774	2,074	1,732	1,560	1,678	2,147	1,973	2,011	1,860	2,351	48
(Excess of births.....)	28,783	2,143	2,149	2,571	2,164	2,733	2,518	2,615	2,555	2,673	2,329	2,238	2,040	5
Monthly average of excess of births over deaths for 1881 to 1890 inclusive	24,430	1,753	1,737	2,066	2,063	2,280	2,146	2,124	2,082	2,065	2,040	1,933	2,116	-14

^a The number of deaths returned in unknown months exceeds the number of births so returned for each year, given in the table, except 1890 and 1891. For this reason the minus sign (-) is prefixed to the differences and they should be read as the excess of deaths over births.

VITAL STATISTICS OF MICHIGAN, 1891.

EXHIBIT J.—*Comparison of natural increase and balance of migration in Michigan, 1871-1891.*

Years.	Natural increase, or excess of births over deaths.	Balance of migration, or excess of average annual increase* over natural increase.
1871.....	16,261	29,024
1872.....	14,622	30,666
1873.....	20,350	24,938
1874.....	18,651	26,837
1875.....	19,968	25,320
1876.....	21,659	23,629
1877.....	20,476	24,812
1878.....	22,396	22,892
1879.....	19,715	25,573
1880.....	19,221	26,067
Average of decade, 1871-80.....	19,832	25,956
1881.....	15,511	30,184
1882.....	20,601	25,094
1883.....	23,903	21,792
1884.....	22,352	23,343
1885.....	25,473	20,222
1886.....	22,908	22,787
1887.....	26,744	18,951
1888.....	27,188	18,507
1889.....	28,957	16,798
1890.....	30,664	15,031
Average of decade, 1881-90.....	24,430	21,265
1891.....	28,733	16,962
Total, twenty years, 1871-90.....	437,623	472,207

* Average annual increase, by United States censuses, 1871-80, was 45,285; 1881-90, 45,695.

According to the report of the United States Commissioner of Immigration, 5,402 immigrants entered the United States with intention to settle in Michigan during the fiscal year ending June 30, 1890. For the year ending June 30, 1892, the number was 5,444. These numbers are decidedly lower than those assigned for the corresponding periods of time in the table. The Commissioner's figures, however, it should be remembered take no account of immigrants destined for Michigan who land in Canadian ports *en route* to this country, nor of the accessions received from Canada itself. Judging from the number of marriages yearly recorded in which the birthplaces of one or both parties are given as Canada, this latter item reaches a considerable amount. The number of citizens of the United States who remove from other parts of this country to settle in Michigan, although balanced to some degree by movement of Michigan-born population to the West and South, must also add to the yearly number of inhabitants added otherwise than by natural increase. Could the exact number of all of the inhabitants received from these different sources be known, it would probably be found that the figures presented in the table are not very wide of the mark, although confessedly founded on very imperfect data.

Exhibit K concludes the list of general exhibits, and furnishes in convenient form the numbers of marriages, births, deaths and the excess of births over deaths, by sex, for each county of the State. The population of each county is given as furnished by the census of 1890. It would be impracticable to introduce any estimates of the increase during the year since the census was taken into tables complicated by the statement of sex.

VITAL STATISTICS OF MICHIGAN, 1891.

EXHIBIT K.—*Number of marriages, births, deaths and excess of births over deaths, registered in Michigan for the year 1891, by counties, compared with the population, stated by sex, as given by the United States census of 1890.*

State and counties.	Population by U. S. census, 1890.			Births, 1891.			Deaths, 1891.			Excess of births over deaths, 1891.					
	Total.	Sex.		Total.	Sex.		Total.	Sex.		Total.	Sex.				
		Males.	Females.		Males.	Females.		Males.	Females.		Males.	Females.			
State	2,068,990	1,091,740	1,077,250	19,231	26,130	24,246	127	22,079	11,908	9,998	173	28,783	14,532	14,248	38
Alcona	5,470	2,226	2,143	40	40	43	—	25	12	13	—	58	28	30	—
Alcona	1,236	632	605	8	4	6	—	2	2	—	—	8	2	6	—
Alcona	29,961	20,015	18,916	351	305	394	3	455	248	202	5	297	117	182	-2
Alcona	15,541	8,182	7,359	115	273	280	—	150	83	67	—	353	100	163	—
Alcona	10,412	5,679	4,735	104	113	115	2	76	39	35	2	154	74	80	—
Alcona	5,693	2,914	2,595	46	61	74	—	31	16	15	—	104	45	59	—
Alcona	2,096	1,755	1,291	36	56	40	—	38	22	16	—	58	31	24	—
Alcona	23,798	12,427	11,354	212	192	201	1	181	108	72	1	213	84	129	—
Alcona	56,412	29,672	26,740	506	819	791	—	584	286	248	—	1,103	557	546	—
Alcona	5,287	2,677	2,480	60	71	67	—	58	27	31	—	80	44	36	—
Alcona	41,295	20,920	20,316	425	286	276	3	322	167	158	2	248	119	123	1
Alcona	26,791	13,461	13,330	245	242	183	1	261	144	116	1	165	98	67	—
Alcona	48,501	21,791	21,710	411	308	299	—	355	208	147	—	250	98	152	—
Alcona	20,653	10,401	10,162	210	159	138	—	151	83	69	—	146	77	69	—
Alcona	9,846	5,172	4,514	81	88	79	—	73	41	32	—	89	42	47	—
Alcona	11,946	6,508	5,478	89	163	122	—	90	49	41	—	106	114	81	—
Alcona	12,019	6,008	5,413	117	120	103	3	79	46	32	1	147	74	71	3
Alcona	7,536	4,296	3,272	71	88	69	—	61	27	34	—	96	61	35	—
Alcona	26,500	13,514	12,981	246	262	211	—	218	110	106	—	255	153	108	—

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	2,993	1,885	1,077	34	50	33	15	9	7	2	41	25	16
Crawford.....													
Delta.....	15,330	8,849	6,481	199	437	239	194	173	108	62	235	121	123
Dickinson a.....				41	557	317	240	234	147	74	338	170	166
Easton.....	32,094	16,374	15,820	325	473	227	247	334	156	177	141	71	70
Emmet.....	8,766	4,515	4,241	90	132	69	61	117	64	52	15	7	9
Genesee.....	39,430	19,946	19,494	355	535	309	276	334	192	192	301	117	94
Gladwin.....	4,208	2,553	1,655	46	19	9	10	6	3	3	13	6	7
Gogebic.....	13,166	8,690	4,476	164	501	245	254	232	92	63	269	153	191
Gd. Traverse.....	12,355	7,164	6,191	149	296	150	146	164	98	66	132	52	80
Gratiot.....	22,068	14,902	13,766	275	436	252	233	201	103	98	286	144	140
Hilledale.....	30,660	15,441	15,319	270	394	223	169	291	141	148	108	82	21
Houghton.....	35,389	19,553	15,886	419	1,530	798	790	490	282	207	1,040	516	523
Huron.....	22,545	14,896	13,649	261	792	450	341	217	114	103	575	336	238
Ingham.....	37,666	19,409	13,257	390	601	302	296	407	205	202	194	97	96
Ionia.....	32,301	16,819	15,982	311	531	256	270	285	115	118	296	143	153
Iosco.....	15,224	8,340	6,884	108	319	177	142	149	83	66	170	94	76
Iron b.....	4,432	2,783	1,649	37									
Isabella.....	18,784	9,660	8,334	180	380	197	192	161	85	76	223	112	116
Ilele Royal b.....	135	128	9										
Jackson.....	45,031	22,833	22,198	391	602	308	294	408	213	190	199	95	104
Kalamazoo.....	39,273	19,588	19,685	402	748	409	337	446	238	207	302	171	130
Kalkaska.....	5,160	2,915	2,245	56	126	68	58	56	26	30	70	42	28
Kent.....	109,922	56,267	53,655	1,337	2,319	1,186	1,144	1,289	679	548	1,110	507	596
Keweenaw.....	2,894	1,630	1,264	22	134	59	75	75	39	36	59	20	39
Lake.....	6,505	3,755	2,750	40	86	35	51	19	12	7	67	23	44
Lapeer.....	29,213	15,034	14,179	251	470	245	223	223	115	108	247	130	117
Leelanau.....	7,944	4,257	3,657	61	197	96	101	62	30	32	135	66	69

a Not organized in 1890. b No returns for 1891. * The minus sign indicates an excess of deaths over births.

VITAL STATISTICS OF MICHIGAN, 1891.

EXHIBIT K.—Continued.

Counties.	Population by U. S. census, 1880.			Marriages, 1891.	Births, 1891.			Deaths, 1891.			Excess of births over deaths, 1891.					
	Total	Sex.			Total.	Sex.		Total.	Sex.		Total.	Sex.				
		Males.	Females.			Males.	Females.		Unk.	Males.		Females.	Unk.	Males.	Females.	Unk.
Lenawee	48,448	23,914	24,534	392	708	371	336	1	465	244	220	1	243	127	116	-----
Livingston	20,858	10,748	10,110	152	815	153	162	-----	194	98	96	-----	121	55	66	-----
Loce	2,455	1,608	882	30	58	26	32	-----	9	6	8	-----	49	20	29	-----
Mackinac	7,880	4,637	3,193	71	70	35	35	-----	17	10	7	-----	53	25	28	-----
Macomb	31,813	16,201	15,612	255	587	308	279	-----	834	167	167	-----	253	141	112	-----
Manistee	24,280	12,923	11,307	211	627	336	291	-----	288	167	121	-----	389	169	170	-----
Manitou	860	479	381	1	12	5	7	-----	10	6	4	-----	2	-1	3	-----
Marquette	39,521	22,927	16,594	468	1,244	624	620	-----	608	365	243	-----	636	259	377	-----
Mason	16,835	8,758	7,627	131	418	213	205	-----	178	99	79	-----	240	114	126	-----
Meecosta	19,697	10,326	9,371	131	390	201	179	-----	163	98	65	-----	217	108	114	-----
Menominee	33,639	20,885	12,754	233	554	288	265	1	144	81	62	1	410	207	203	-----
Midland	10,657	5,675	4,982	104	288	128	110	-----	98	45	53	-----	140	58	57	-----
Misaukee	5,043	2,969	2,079	61	147	81	66	-----	41	27	14	-----	106	54	52	-----
Monroe	32,837	16,624	15,713	308	737	370	366	1	307	173	133	1	480	197	238	-----
Montcalm	22,637	11,850	10,787	289	596	301	294	1	251	130	121	-----	345	171	173	1
Montmorency	1,457	888	602	6	18	10	8	-----	7	1	6	-----	11	9	3	-----
Muskegon	40,013	20,927	19,086	333	1,064	532	534	8	482	231	195	8	682	301	329	3
Neenawgo	20,476	11,850	9,126	169	374	190	184	-----	189	79	60	-----	235	111	124	-----
Oakland	41,245	20,964	20,281	288	518	254	257	2	369	208	191	-----	114	46	66	2
Oscoda	15,668	8,863	7,396	114	285	150	145	-----	131	69	62	-----	164	81	83	-----
Ogemaw	5,588	3,266	2,198	46	105	51	54	-----	29	16	13	-----	76	35	41	-----

VITAL STATISTICS AND POPULATION.

City	1870	1880	1890	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000	2010	2020
Antigonish	2,766	2,943	1,414	38	61	81	28	2	20	18	7	41	18	21	2	
Aspen	14,680	7,968	6,763	186	246	179	167	---	135	71	64	211	108	103	---	
Beaumont	1,904	1,185	739	13	34	13	31	---	6	4	2	28	9	19	---	
Beaumont	4,373	2,410	1,863	36	67	34	83	---	41	27	18	26	7	20	-1	
Beaumont	36,363	19,341	17,017	245	841	436	408	---	316	181	135	525	254	271	---	
Beaumont	4,687	2,106	2,106	30	123	70	53	---	41	22	19	81	43	38	---	
Beaumont	2,068	1,801	732	16	25	15	10	---	6	4	2	19	11	8	---	
Beaumont	33,273	43,917	39,356	691	2,010	1,041	968	1	981	500	481	1,079	541	587	1	
Beaumont	33,539	17,008	15,361	220	777	400	376	1	289	136	181	508	264	245	-1	
Beaumont	5,818	3,654	2,164	78	97	47	50	---	32	22	10	65	25	40	---	
Beaumont	30,962	16,024	14,928	807	434	201	281	2	194	111	82	240	90	149	1	
Beaumont	53,106	26,606	25,500	488	1,124	634	500	---	580	281	249	591	848	251	---	
Beaumont	25,366	12,507	12,549	229	365	303	162	---	274	146	128	91	57	84	---	
Beaumont	33,508	16,840	15,668	253	558	277	281	---	231	115	106	337	162	175	---	
Beaumont	30,541	15,498	15,048	273	452	221	227	4	276	129	143	176	92	84	---	
Beaumont	43,310	20,766	21,454	355	531	287	345	2	401	222	179	183	65	66	2	
Beaumont	257,114	127,765	129,349	2,295	13,633	7,301	6,353	48	4,594	2,501	2,064	9,088	4,700	4,329	9	
Beaumont	11,278	6,010	5,268	130	308	156	147	---	72	36	35	231	120	112	-1	

The minus sign indicates an excess of deaths over births.

PART II.—BIRTHS IN MICHIGAN DURING THE YEAR 1891.

The total number of births returned as having occurred in Michigan during the year 1891 was 50,812. Of these 26,439 were males, and 24,246 were females. There were 127 cases in which the sex was not reported, or was stated to be unknown. There were 684 cases of plural births—677 pairs of twins and 7 sets of triplets. No quadruplets were reported for the year. The number of still-births, which are included in the total number of births, and also in the tables of deaths, was 1,090. The number of illegitimate children born was 389.

The total number of births returned for the year exceeds the number reported for any year since the beginning of registration, with the single exception of the year 1890, when 52,306 births were returned. Wayne county for that year returned 17,372 births, which number, as compared with that returned for 1889, 12,023, and with that for the year 1891, 13,632, shows a very remarkable increase for a single year.

The suppositions that this large increase of births returned was due to an actually increased birth-rate or that the enumeration was more accurate in that year, are alike improbable. It is stated by the county clerk, and, indeed, was a matter of common newspaper notoriety at the time, that the returns were "shamefully stuffed." Births, and deaths as well, were reported as having occurred at addresses, which, on investigation, were found to be vacant lots or unoccupied for dwelling purposes. The enumerators for Detroit are appointed by the city council, and are not directly responsible either to the county clerk or to the central registration office. There is, consequently, no check upon incorrect and fraudulent returns, and, as the remuneration of the enumerators is in proportion to the number of births and deaths reported, the way is open to large sophistication of the vital records. It is impossible to determine the exact amount of excess in this particular year, but it is probable that if the names that were unduly inserted should be deducted from the State total for 1890, there would be shown a considerable increase in the number of births registered in 1891 over the previous year.

BIRTH-RATES IN MICHIGAN, 1891.

In Exhibit E, p. 10, the birth-rate for 1891, based on an estimated population for the year of 2,139,584, is 23.7 per thousand inhabitants. This exceeds the rates for any preceding year of registration, excepting only 1888, 1889 and 1890, in the latter of which the returned number of births was unsatisfactory. It was exceedingly unfortunate that this was the case, as an accurate return was much needed for comparison with the United States census taken in this year, in order to ascertain the distribution of births in relation to population in the various counties of the State. Nevertheless, admitting

the inaccuracy of the returns for 1890, the fact remains that we have no other recent data for direct comparison. The rates for the present year are necessarily calculated upon an estimated population for each county, and, as various parts of the State show great differences in annual growth, it is impossible to consider such comparisons as satisfactory as those between the returns and census of the same year.

The relations between the county rates for the two years may be studied in Exhibits F and G in Part I of this report. The birth-rates for 1891 are also shown for each county, in comparison with the death-rates, in the map facing the geographical division of the State under Causes of Death, Part IV of this report. We find, as might be expected, a considerable reduction from the excessively large figures for Wayne county in 1890—67.6 to 51.2. These latter figures even are far in excess of those for any other county in the State. Comparison with the rates of adjacent counties, shows that Wayne county exceeds them in unreasonably large proportion. The returns of births in those counties, are certainly too low, by the present system of enumeration, owing to the lapse of time between the date of birth, and the visit of the enumerator, but this element of correction would apply with nearly equal force to city as well as country returns. Again, the census of 1890 may have assigned too low a population to Wayne county, but it is difficult to believe that such a large discrepancy, as appears, can be entirely owing to this cause. In certain other counties it is impossible to regard the figures presented as satisfactory. Thus, Gladwin only reports births at the rate of 4.2 per 1,000, less by 0.1 even than those of 1890, while in all the counties surrounding the rate ranges much higher. Keweenaw county shows a very high rate both for 1890 and 1891, while according to the United States census the population of the county has been actually decreasing in recent years. Alpena shows a rise of over 10 per 1,000 in a single year; Montmorency a fall of nearly 14 per 1,000. Fortunately, such discrepancies as these are few and are due, for the most part, in all probability, to accidents and irregularities of registration.

The two years compared in Exhibits F and G are in general sufficiently close to confirm each other, and to give a correct idea of the efficiency of the present system of registration in various parts of the State, and the actual differences in the rates of births in different localities. Thus the southern half of the lower peninsula, corresponding to the area which shows an actual decrease in country population during the decade 1881-1890 by United States census reports, shows for 22 counties an average birth-rate of only 15.6 per 1,000. The counties in which the rural population shows a gain ranging from 0 to 25 per cent in ten years give as an average for ten counties a birth-rate of 21.7 per 1,000. From this list Wayne county is excluded for reasons already stated. The many cities included here raise the average of the group. The 33 counties which increased from 25 to 100 per cent in the decade give an average birth-rate of 21.5. Lastly, the 14 counties showing the largest rate of gain in the ten years considered, do not show the highest birth-rate of the four groups, the rate being only 17.9 per 1,000. This is due partly to defective registration, the rates for some of these latter counties being ridiculously low. They are for the most part sparsely settled and the difficulty and cost of an accurate enumeration would be greater than the compensation rendered therefor by the State. It is in these latter groups of counties, moreover, that immigration is more rapidly filling town and country alike and the natural increase plays only a subordinate part at present in the growth of population.

The facts relating to the distribution of these births through the year, and also through the different counties of the State, together with comparisons with preceding years, are shown in the following tables. Analysis is made chiefly with reference to sex, color and nativity of p

VITAL STATISTICS OF MICHIGAN, 1891.

Table 3 shows the order of the months for births actually returned. In previous years an attempt has been made to show what would probably have been the number of births returned if the enumeration had been made at the end of each month. Such "correction for probable omissions" is based on comparisons between registration returns for certain months, and census returns for the same months, said census returns been taken nearer the time in which the births occurred than those of the registration. For such comparison no recent data are at present available, the United States census bureau being unable to supply a statement of either births or deaths, by months in 1890. It was thought proper to confine the present report to the actual results derived from the present system of collection.

TABLE 3.--Births during the years 1889-1891, according to the returns, and the average for ten years, 1881-1890, showing number and percentage by months in order of greatest first.

Order.	1889.			1890.			1891.			Average for 10 years. 1881-1890.		
	Months.	Num- ber.	Per cent of total.	Months.	Num- ber.	Per cent of total.	Months.	Num- ber.	Per cent of total.	Months.	Num- ber.	Per cent of total.
	Year....	49,272	100.0	Year....	52,308	100.0	Year..	50,812	100.0	Year..	48,296	100.0
1	Dec....	4,646	9.4	Dec....	4,765	9.1	Aug...	4,702	9.2	Aug...	3,993	8.2
2	Aug....	4,526	9.2	Aug....	4,651	8.9	Sept..	4,646	9.1	Sept..	3,924	8.1
3	Sept....	4,382	8.8	May....	4,568	8.7	May...	4,465	8.8	Dec....	3,863	8.0
4	Nov....	4,331	8.8	Sept....	4,517	8.6	Dec....	4,391	8.6	Oct....	3,749	7.7
5	Oct....	4,292	8.7	April....	4,407	8.4	Mar...	4,345	8.6	May...	3,727	7.6
6	July...	4,252	8.6	July....	4,397	8.4	Oct....	4,340	8.5	July...	3,723	7.6
7	May....	4,238	8.6	March....	4,356	8.3	July....	4,293	8.4	April...	3,682	7.4
8	April...	4,057	8.2	June....	4,318	8.3	April...	4,238	8.3	Mar....	3,608	7.2
9	June...	4,050	8.2	Nov....	4,223	8.1	Nov....	4,098	8.1	Nov....	3,540	7.2
10	March...	4,001	8.2	Oct....	4,219	8.1	June...	4,078	8.0	June..	3,504	7.1
11	Jan....	3,340	6.8	Jan....	4,130	7.9	Jan....	3,629	7.1	Feb....	2,991	7.1
12	Feb....	3,104	6.3	Feb....	3,718	7.1	Feb....	3,534	6.9	Jan....	2,978	6.9
	Unk....	53	.1	Unk....	42	-----	Unk....	53	.1	Unk....	44	.1
	Av.*....	4,106	8.3	Av.*....	4,359	8.3	Av.*....	4,234	8.3	Av.*....	3,608	7.2

* Including births in unknown month.

BIRTHS BY COUNTIES, BY MONTHS AND BY SEX.

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Table 4 gives a detailed statement of the number of births, according to sex, for each month and for each county of the State.

TABLE 4.—*Exhibiting by counties and by sex the number of births returned for the year, and in each month of the year, ending Dec. 31, 1891. (Still-births included.)*

State and counties.	Sex.	Year, 1891.	Months, 1891.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
State	Totals	50,812	3629	3534	4345	4238	4465	4078	4295	4702	4646	4340	4098	4391	53
	Males	26,439	1914	1857	2292	2205	2259	2090	2180	2435	2431	2295	2192	2263	23
	Females	24,246	1708	1674	2045	2025	2191	1979	2097	2255	2205	2029	1898	2115	25
	Unknown	127	7	3	8	8	15	9	16	12	10	13	8	13	5
Alcona	Totals	83	7	5	10	7	3	6	11	5	6	9	9	5	---
	Males	40	2	4	3	5	---	4	4	3	2	5	5	3	---
	Females	43	5	1	7	2	3	2	7	2	4	4	4	2	---
Alger	Totals	10	---	1	---	2	---	2	---	1	1	2	---	1	---
	Males	4	---	---	---	---	---	2	---	1	---	---	---	1	---
	Females	6	---	1	---	2	---	---	---	---	1	2	---	---	---
Allegan	Totals	752	57	44	79	71	52	62	69	73	61	56	58	70	---
	Males	365	28	23	43	40	18	23	39	36	25	33	27	30	---
	Females	384	29	21	35	31	34	38	29	37	36	23	31	40	---
	Unknown	3	---	---	1	---	---	1	1	---	---	---	---	---	---
Alpena	Totals	503	55	46	40	52	41	29	45	34	47	34	41	38	1
	Males	273	34	27	19	24	17	22	24	12	31	23	23	17	---
	Females	230	21	19	21	28	24	7	21	22	16	11	18	21	1
Antrim	Totals	280	12	10	18	21	25	26	23	29	29	14	15	8	---
	Males	113	4	6	8	14	15	11	13	11	13	6	6	6	---
	Females	115	8	4	10	7	10	14	10	17	16	8	9	2	---
	Unknown	2	---	---	---	---	---	1	---	1	---	---	---	---	---
Arenac	Totals	135	12	6	7	10	19	12	8	17	11	10	14	9	---
	Males	61	8	3	5	5	6	5	1	7	6	5	5	5	---
	Females	74	4	3	2	5	13	7	7	10	5	5	9	4	---
Baraga	Totals	96	5	6	11	6	8	6	5	5	10	15	11	8	---
	Males	56	4	4	5	6	4	2	2	3	6	10	7	3	---
	Females	40	1	2	6	---	4	4	3	2	4	5	4	5	---
Barry	Totals	394	25	32	38	20	28	34	36	29	47	33	32	40	---
	Males	192	16	15	16	5	15	15	13	14	29	14	17	23	---
	Females	201	9	17	21	15	13	19	23	15	18	19	15	17	---
	Unknown	1	---	---	1	---	---	---	---	---	---	---	---	---	---

VITAL STATISTICS OF MICHIGAN, 1891.

TABLE 4.—CONTINUED.—*Births by counties, by months, and by sex.*

Counties.	Sex.	Year, 1891.	Months, 1891.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
Bay	Totals	1,637	144	121	171	128	130	126	150	147	135	145	112	128	-----
	Males	843	68	54	92	74	70	59	72	85	66	71	65	67	-----
	Females	794	76	67	79	54	60	67	78	62	69	74	47	61	-----
Benzie	Totals	138	4	10	14	16	14	12	20	8	12	12	8	8	-----
	Males	71	2	5	8	8	5	6	10	5	6	6	6	4	-----
	Females	67	2	5	6	8	9	6	10	3	6	6	2	4	-----
Berrien	Totals	565	43	35	44	40	62	33	46	51	48	53	46	62	2
	Males	286	24	21	22	20	30	17	21	23	27	25	20	35	1
	Females	276	19	13	22	20	32	16	25	27	21	28	25	27	1
	Unknown	3	---	1	---	---	---	---	---	1	---	---	1	---	---
Branch	Totals	426	22	31	37	35	26	30	47	53	44	38	41	26	1
	Males	242	11	16	26	19	18	16	26	25	24	19	27	15	-----
	Females	183	11	15	11	16	8	14	21	28	20	14	12	11	1
	Unknown	1	---	---	---	---	---	---	---	---	---	---	1	---	---
Calhoun	Totals	605	27	30	48	38	54	57	59	57	67	62	46	60	-----
	Males	306	18	18	21	18	36	29	24	28	33	30	27	34	-----
	Females	299	9	12	27	20	28	28	35	29	34	32	19	26	-----
Case	Totals	297	17	28	19	29	33	30	22	23	27	18	21	25	5
	Males	159	12	16	12	14	16	17	10	9	20	8	10	12	3
	Females	138	5	12	7	15	17	13	12	14	7	10	11	13	2
Charlevoix	Totals	162	8	12	13	12	18	12	17	11	14	20	12	13	-----
	Males	83	4	5	7	4	11	5	9	8	6	10	4	10	-----
	Females	79	4	7	6	8	7	7	8	3	8	10	8	3	-----
Chelsygan	Totals	285	21	22	28	23	22	29	29	26	21	28	17	19	-----
	Males	163	12	14	16	14	11	19	13	11	14	18	9	12	-----
	Females	122	9	8	12	9	11	10	16	15	7	10	8	7	-----
Chippewa	Totals	226	16	13	33	17	18	15	13	18	20	17	21	19	6
	Males	120	10	5	13	9	7	10	8	10	11	9	15	11	2
	Females	103	6	7	20	8	11	5	5	8	9	7	6	8	3
	Unknown	3	---	1	---	---	---	---	---	---	---	---	---	---	1
Clare	Totals	157	4	9	14	18	14	16	15	17	14	9	13	10	4
	Males	78	2	3	4	9	7	10	9	15	6	5	7	5	2
	Females	69	1	6	10	9	7	6	6	2	8	4	6	5	2
Clinton	Totals	473	47	33	38	32	38	31	45	52	53	33	35	36	-----
	Males	262	31	17	21	17	21	16	24	28	28	22	17	20	-----
	Females	211	16	16	12	15	17	15	21	24	25	16	18	16	-----

BIRTHS BY COUNTIES, BY MONTHS AND BY SEX.

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TABLE 4.—CONTINUED.—*Births by counties, by months, and by sex.*

Counties.	Sex.	Year, 1891.	Months, 1891.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
Crawford.....	Totals	50	1	2	6	2	6	7	3	6	7	5	5	---	---
	Males.....	32	---	1	5	---	3	2	3	5	5	3	5	---	---
	Females	18	1	1	1	2	3	5	---	1	2	2	---	---	---
Delta	Totals	427	28	27	35	29	37	42	39	50	35	40	32	33	---
	Males.....	229	19	13	15	19	21	22	18	27	17	22	18	18	---
	Females	194	9	14	20	10	15	19	21	23	17	17	14	15	---
	Unknown	4	---	---	---	---	1	1	---	---	1	1	---	---	---
Dickinson.....	Totals	557	46	46	46	30	48	64	47	52	44	43	43	48	---
	Males.....	317	32	27	26	13	26	36	29	27	30	28	20	23	---
	Females	240	14	19	20	17	22	28	18	25	14	15	23	25	---
Eaton	Totals	475	34	17	45	43	34	28	39	52	47	39	51	45	---
	Males.....	227	12	13	21	19	18	17	20	28	21	13	25	20	---
	Females	247	22	4	25	24	16	11	18	24	26	26	26	25	---
	Unknown	1	---	---	---	---	---	---	1	---	---	---	---	---	---
Emmet	Totals	132	9	8	9	13	12	16	8	13	15	9	13	7	---
	Males.....	69	3	3	3	8	6	8	3	8	11	6	8	2	---
	Females	61	6	5	5	5	6	8	5	4	4	3	5	5	---
	Unknown	2	---	---	1	---	---	---	---	1	---	---	---	---	---
Genesee	Totals	585	36	35	49	58	46	39	50	64	59	53	49	47	---
	Males.....	309	21	17	28	29	19	22	28	26	31	31	30	27	---
	Females	276	15	18	21	29	27	17	22	38	28	22	19	20	---
Gladwin.....	Totals	19	---	4	1	2	2	1	3	---	3	1	1	1	---
	Males.....	9	---	3	1	---	1	---	---	---	1	1	1	1	---
	Females	10	---	1	---	2	1	1	3	---	2	---	---	---	---
Gogebic	Totals	501	31	34	35	41	40	36	43	50	55	39	49	47	1
	Males.....	245	13	19	15	16	22	19	21	28	31	20	23	18	---
	Females	254	18	15	20	24	18	17	22	22	24	19	26	29	---
	Unknown	2	---	---	---	1	---	---	---	---	---	---	---	---	1
Grand Traverse.....	Totals	296	13	16	28	30	21	22	29	30	30	18	28	31	---
	Males.....	150	7	4	12	13	11	13	13	13	16	10	16	22	---
	Females	146	6	12	16	17	10	9	16	17	14	8	12	9	---
Gratiot	Totals	486	23	19	34	48	53	50	58	46	38	35	45	37	---
	Males.....	252	11	8	14	30	25	24	29	24	24	19	22	22	---
	Females	233	12	11	20	18	28	26	28	22	14	16	23	15	---
	Unknown	1	---	---	---	---	---	---	1	---	---	---	---	---	---

TABLE 4.—CONTINUED.—*Births by counties, by months, and by sex.*

Counties.	Sex.	Year, 1890.	Months, 1891.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
Hillsdale	Totals	394	17	26	23	26	27	30	47	46	44	45	19	44	---
	Males	223	9	21	13	13	13	16	26	24	24	27	12	25	---
	Females	169	8	5	10	13	14	14	20	22	20	18	7	18	---
	Unknown	2	---	---	---	---	---	---	1	---	---	---	---	1	---
Houghton	Totals	1,530	112	91	135	129	125	124	114	141	151	131	134	141	2
	Males	798	63	47	77	70	63	59	62	73	80	70	66	68	---
	Females	730	48	44	58	59	62	65	52	68	71	61	68	73	1
	Unknown	2	1	---	---	---	---	---	---	---	---	---	---	---	1
Huron	Totals	792	51	54	76	70	58	66	61	77	75	63	69	71	1
	Males	450	32	29	39	44	29	35	33	42	44	38	42	43	---
	Females	341	19	25	37	26	29	31	28	35	31	25	27	27	1
	Unknown	1	---	---	---	---	---	---	---	---	---	---	---	---	1
Ingham	Totals	601	36	37	45	47	49	64	57	42	62	59	47	56	---
	Males	302	14	22	20	20	22	30	25	26	34	26	22	29	---
	Females	298	22	9	25	27	27	34	32	16	28	32	25	27	---
	Unknown	1	---	---	---	---	---	---	---	---	---	1	---	---	---
Ionia	Totals	331	26	36	41	36	35	52	54	52	56	40	45	48	---
	Males	258	17	17	22	16	15	29	32	37	35	18	18	23	---
	Females	270	18	19	19	20	17	22	22	17	21	22	26	25	---
	Unknown	3	---	---	---	---	---	1	---	1	---	---	1	---	---
Iosco	Totals	319	22	19	22	22	22	22	25	31	34	27	18	34	2
	Males	177	9	11	10	10	13	10	13	20	20	17	9	17	1
	Females	142	13	8	12	12	15	12	12	11	14	10	9	17	1
	Unknown	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Iron	Males	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Females	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	Totals	366	23	19	27	25	44	47	42	42	36	34	35	36	1
	Unknown	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Isabella	Males	197	12	10	10	10	13	14	13	13	13	12	17	21	---
	Females	192	11	10	17	15	23	13	17	12	13	12	15	17	1
	Totals	392	23	20	27	25	36	27	30	25	26	24	32	37	---
	Unknown	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Jackson	Males	306	11	26	22	24	21	37	32	23	22	13	23	22	---
	Females	294	13	21	19	20	23	15	12	26	22	23	23	13	---
	Totals	745	20	47	41	44	44	52	44	49	44	36	46	35	1
	Unknown	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Kalamazoo	Males	309	24	22	20	20	20	22	27	23	22	20	31	28	---
	Females	327	26	23	21	19	22	22	19	19	27	22	24	29	1
	Totals	636	50	45	41	39	42	44	46	42	49	42	55	57	---
	Unknown	2	---	---	---	---	---	---	1	---	---	---	1	---	---

BIRTHS BY COUNTIES, BY MONTHS AND BY SEX.

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TABLE 4.—CONTINUED.—*Births by counties, by months, and by sex.*

Counties.	Sex.	Year. 1890.	Months, 1891.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
Kalkaska	Totals	126	7	8	16	8	24	8	8	8	9	11	6	13	---
	Males	68	3	4	10	5	16	5	2	5	6	5	2	5	---
	Females	58	4	4	6	3	8	3	6	3	3	6	4	8	---
Kent	Totals	2,349	144	124	158	197	194	195	204	225	241	227	235	214	1
	Males	1,186	74	66	80	106	81	94	109	114	120	121	111	110	---
	Females	1,144	68	58	77	90	109	99	94	111	119	104	114	100	1
	Unknown	19	2	---	1	1	4	2	1	---	2	2	---	4	---
Keweenaw	Totals	184	6	17	10	15	19	9	9	8	7	10	13	11	---
	Males	59	4	9	4	6	8	6	5	---	3	6	4	4	---
	Females	75	2	8	6	9	11	3	4	8	4	4	9	7	---
Lake	Totals	86	2	4	7	11	8	9	11	9	8	4	5	8	---
	Males	35	1	2	5	2	5	6	3	3	---	2	4	2	---
	Females	51	1	2	2	9	3	3	8	6	8	2	1	6	---
Lapeer	Totals	470	33	24	29	29	36	37	48	61	42	51	37	42	1
	Males	245	12	15	17	19	18	18	22	31	24	24	23	27	---
	Females	225	21	9	12	10	23	19	26	30	18	27	14	15	1
Leelanau	Totals	197	13	13	16	21	22	16	18	29	16	11	13	9	---
	Males	96	7	9	3	12	10	9	6	13	9	5	9	4	---
	Females	101	6	4	13	9	12	7	12	16	7	6	4	5	---
Lenawee	Totals	708	54	48	58	47	61	58	76	78	59	65	54	55	---
	Males	371	22	25	28	32	28	33	36	42	32	33	32	28	---
	Females	336	32	23	30	15	33	25	40	30	27	32	22	27	---
	Unknown	1	---	---	---	---	---	---	---	1	---	---	---	---	---
Livingston	Totals	315	22	20	22	23	28	19	26	26	42	32	23	32	---
	Males	153	14	13	12	6	19	7	14	11	20	15	11	11	---
	Females	162	8	7	10	17	9	12	12	15	22	17	12	21	---
Luce	Totals	58	2	4	5	8	4	5	4	4	4	6	3	9	---
	Males	26	---	2	3	4	---	4	3	1	3	3	1	2	---
	Females	32	2	2	2	4	4	1	1	3	1	3	2	7	---
Mackinac	Totals	70	3	11	7	8	7	3	12	7	2	2	2	3	3
	Males	35	3	6	4	4	3	2	6	1	---	2	1	2	1
	Females	35	---	5	3	4	4	1	6	6	2	---	1	1	2
Macomb	Totals	587	42	48	51	55	37	44	54	53	59	48	55	46	---
	Males	308	24	24	36	21	16	24	27	28	32	27	26	23	---
	Females	279	18	19	15	34	21	20	27	25	27	21	29	23	---

VITAL STATISTICS OF MICHIGAN, 1891.

TABLE 4.—CONTINUED.—*Births by counties, by months, and by sex.*

Counties.	Sex.	Year, 1890.	Months, 1891.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
Manistee	Totals	627	48	44	46	42	52	47	47	67	45	57	64	65	---
	Males	336	24	23	24	27	29	26	24	36	27	29	37	30	---
	Females	291	24	21	22	15	23	21	23	31	18	28	27	38	---
Manitou	Totals	12	---	---	1	---	---	1	1	1	1	2	1	4	---
	Males	5	---	---	---	---	---	1	1	1	---	1	---	1	---
	Females	7	---	---	1	---	---	---	---	---	1	1	1	3	---
Marquette	Totals	1,244	109	109	114	101	127	95	101	111	102	87	97	91	---
	Males	624	60	58	67	41	59	45	46	52	53	38	53	52	---
	Females	620	49	51	47	60	68	50	55	59	49	49	44	39	---
Mason	Totals	418	30	36	35	36	37	28	31	35	43	33	30	44	---
	Males	213	13	20	17	19	20	20	15	17	20	16	16	20	---
	Females	205	17	16	18	17	17	8	16	18	23	17	14	24	---
Mecosta	Totals	380	14	15	36	39	29	34	38	29	43	34	39	30	---
	Males	201	7	8	20	20	17	19	23	13	20	20	17	17	---
	Females	179	7	7	16	19	12	15	15	16	23	14	22	13	---
Menominee	Totals	554	50	49	57	55	40	48	48	46	37	42	35	47	---
	Males	288	23	23	24	29	20	29	23	28	22	22	18	27	---
	Females	265	27	26	33	26	20	19	24	18	15	20	17	20	---
	Unknown	1	---	---	---	---	---	---	1	---	---	---	---	---	---
Midland	Totals	238	14	17	19	22	15	15	16	28	27	18	22	25	---
	Males	128	5	8	11	10	6	11	8	17	17	9	14	12	---
	Females	110	9	9	8	12	9	4	8	11	10	9	8	13	---
Missaukee	Totals	147	9	8	13	13	14	15	9	16	17	14	10	9	---
	Males	81	6	4	6	7	8	8	6	7	8	11	5	5	---
	Females	66	3	4	7	6	6	7	3	9	9	3	5	4	---
Monroe	Totals	737	42	52	72	47	62	70	61	76	53	68	52	52	---
	Males	370	21	28	40	19	30	29	30	44	46	29	26	28	---
	Females	366	21	24	32	28	32	41	31	31	37	39	26	24	---
	Unknown	1	---	---	---	---	---	---	---	1	---	---	---	---	---
Montcalm	Totals	596	33	32	44	48	51	48	57	64	57	59	47	56	---
	Males	301	18	11	24	24	21	24	28	32	35	34	24	26	---
	Females	294	15	21	20	24	30	24	28	32	22	25	23	30	---
	Unknown	1	---	---	---	---	---	---	1	---	---	---	---	---	---
Montmorency	Totals	18	---	3	3	---	2	3	3	1	1	---	1	1	---
	Males	10	---	1	---	---	2	3	3	---	---	---	---	1	---
	Females	8	---	2	3	---	---	---	---	1	1	---	1	---	---

BIRTHS BY COUNTIES, BY MONTHS AND BY SEX.

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TABLE 4.—CONTINUED.—*Births by counties, by months, and by sex.*

Counties.	Sex.	Year, 1890.	Months, 1891.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
Muskegon.....	Totals	1,064	71	83	98	93	100	79	89	98	78	91	87	96	1
	Males	532	35	44	49	51	54	37	41	50	42	41	42	45	1
	Females	524	36	39	49	41	46	40	47	48	34	48	45	51	---
	Unknown	8	---	---	---	1	---	2	1	---	2	2	---	---	---
Newaygo.....	Totals	374	24	18	34	48	29	41	34	28	32	32	24	30	---
	Males	190	9	11	13	29	13	19	13	16	14	21	16	16	---
	Females	184	15	7	21	19	16	22	21	12	18	11	8	14	---
Oakland.....	Totals	513	30	41	39	38	53	49	42	42	45	46	49	39	---
	Males	254	12	23	25	20	29	20	24	16	19	22	29	15	---
	Females	257	18	18	14	18	22	29	18	26	26	24	20	24	---
	Unknown	2	---	---	---	---	2	---	---	---	---	---	---	---	---
Oceana.....	Totals	295	11	22	20	29	25	34	23	38	22	29	29	13	---
	Males	150	5	11	11	16	11	17	14	23	10	11	17	4	---
	Females	145	6	11	9	13	14	17	9	15	12	18	12	9	---
Ogemaw.....	Totals	105	2	14	8	9	8	8	5	12	11	9	9	10	---
	Males	51	2	7	5	4	3	3	3	4	6	3	5	6	---
	Females	54	---	7	3	5	5	5	2	8	5	6	4	4	---
Ontonagon.....	Totals	61	1	6	6	8	2	8	5	12	5	5	2	1	---
	Males	31	---	3	5	3	1	2	3	8	2	2	1	1	---
	Females	28	1	3	1	5	1	6	2	3	3	2	1	---	---
	Unknown	2	---	---	---	---	---	---	---	1	---	1	---	---	---
Osceola.....	Totals	346	17	11	24	30	32	31	26	44	48	26	25	32	---
	Males	179	10	6	13	19	16	15	11	19	23	13	14	20	---
	Females	167	7	5	11	11	16	16	15	25	25	13	11	12	---
Oscoda.....	Totals	34	3	2	1	4	1	---	5	5	3	4	3	3	---
	Males	13	1	1	1	2	---	---	3	2	1	1	1	---	---
	Females	21	2	1	---	2	1	---	2	3	2	3	2	3	---
Otsego.....	Totals	67	2	2	6	5	11	6	7	7	6	6	4	4	1
	Males	34	1	1	4	2	7	1	1	3	2	6	3	2	1
	Females	33	1	1	2	3	4	5	6	4	4	---	1	2	---
Ottawa.....	Totals	841	58	66	80	63	69	62	73	89	67	77	65	71	1
	Males	435	42	33	36	36	32	29	38	48	39	43	30	29	---
	Females	406	16	33	44	27	37	33	35	41	28	34	35	42	1
Presque Isle.....	Totals	122	14	10	3	16	11	11	10	13	8	13	6	7	---
	Males	70	7	4	2	10	8	7	4	8	4	10	3	3	---
	Females	52	7	6	1	6	3	4	6	5	4	3	3	4	---

BIRTHS BY COUNTIES, BY MONTHS AND BY SEX.

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TABLE 4.—CONCLUDED.—*Births by counties, by months, and by sex.*

Counties.	Sex.	Year, 1890.	Months, 1891.												Unknown.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Wayne	Totals	13,632	1134	1080	1225	1188	1279	1009	1017	1156	1144	1137	1053	1199	11
	Males	7,201	596	556	663	623	688	515	522	618	605	598	573	638	6
	Females	6,383	535	523	559	560	586	493	488	534	535	534	477	556	3
	Unknown	48	3	1	3	5	5	1	7	4	4	5	3	5	2
Wexford	Totals	303	15	16	23	17	31	27	34	23	35	22	32	28	---
	Males	156	6	9	10	8	21	15	12	13	16	12	17	17	---
	Females	147	9	7	13	9	10	12	22	10	19	10	15	11	---

Table 5 appears in somewhat different form from previous years, some changes being necessary to make it correspond to the information supplied by the Compendium of the Eleventh Census from which the statements of population are taken. The total colored population by the last census is only .6 per cent of the total population. By the census of 1884 it was 1.1 per cent. The decrease agrees with the low birth rate shown in the tables. As in previous years, however, the black inhabitants taken separately have a slightly higher birth-rate than the whites. The mulattoes and Indians fall far below, and reduce the rate for the total colored inhabitants. It should be considered, in the examination of this table, that inferences derived from the comparison of the small numbers represented are not reliable, unless confirmed by the experience of a series of years.

VITAL STATISTICS OF MICHIGAN, 1891.

TABLE 5.—*The number of births in Michigan during the year 1891 compared with the population of same sex and color in 1890; also the per cent of each sex to total births of each color. (Still-births included.)*

Color and race.	Sex.	Population by United States census of 1890.	Children born in 1891.	Rate per 1,000 of births to population by sex.	Per cent of births of each color to total births by sex.	Per cent of births of each sex to total of both sexes.	Number of inhabitants to one birth by color and sex.
All colors.....	Total	2,093,889	50,812	24.3	100.0	100.0	41.2
	Males	1,091,781	26,439	24.2	100.0	52.0	41.3
	Females	1,002,109	24,246	24.2	100.0	47.7	41.3
	Unknown		127		100.0	.3	
White	Total	2,072,884	50,485	24.3	99.4	100.0	41.1
	Males	1,080,717	26,284	24.3	99.4	52.1	41.1
	Females	992,167	24,092	24.3	99.4	47.7	41.1
	Unknown		109		85.8	.2	
Colored.....	Total	21,005	298	14.2	.6	100.0	70.5
	Males	11,068	146	13.2	.6	48.9	75.7
	Females	9,942	146	14.7	.6	48.9	68.1
	Unknown		6		4.7	2.0	
Colored. {	Black	Total	7,036	175	24.9	.3	40.2
	Mulatto	Total	8,187	85	4.8	.1	253.9
	Indian	Total	5,624	88	15.6	.2	68.9
	Asiatic	Total	158				
Unknown color....	Total		29		.1		

Table 6 presents in detail for each county of the State the data in reference to color which are compared collectively in the preceding table. The numbers of those not white are too small to be of any importance. A comparison of births, by sex, to population of each county is also given here. The ratios are stated as per cents and not rates per thousand, the changes of population from 1890 to 1891 rendering such a statement fully as accurate as the facts will warrant. The rates calculated to estimated population Exhibit G, Part I, are probably closer to the truth. The number of male children born to 100 females is, for the State, 109. This is about the proportion that has obtained in recent years. The ratio was 111 to 100 in 1890. Comparing different portions of the State shows very different proportions, varying from only 62 males to 100 females in Oscoda county, to 150 males to 100 females in Roscommon county. As the returns were very imperfect in both of the counties noted, such extreme ratios are probably nothing more than accidental.

BIRTHS BY COUNTIES, SEX AND COLOR.

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TABLE 6.—*Exhibiting, for the State and counties of Michigan, by sex, the population by U. S. census of 1890; the per cent of births in 1891 to population of same sex in 1890; the number of males to 100 females, and, by sex and color, the births returned for 1891. (Still-births included.)*

State and county.	Births—males to 100 females.	Sex.	Population by U. S. census of 1890.	Per cent of births of each sex to population of same sex.	Color—children born in 1891.					
					Total of all colors.	White.	Black.	Mulatto.	Indian.	Unknown.
State	109	Totals	2,092,889	2.4	50,812	50,485	175	35	88	29
		Males	1,091,780	2.4	26,439	26,284	96	12	88	9
		Females	1,002,109	2.4	24,246	24,092	73	23	50	8
		Unknown			127	109	6			12
Alcona	98	Totals	5,409	1.5	83	83				
		Males	3,226	1.2	40	40				
		Females	2,183	2.0	43	43				
Alger	67	Totals	1,238	.8	10	10				
		Males	882	.5	4	4				
		Females	406	1.5	6	6				
Allegan	96	Totals	38,961	1.9	752	747			1	4
		Males	20,015	1.8	365	363			1	1
		Females	18,946	2.0	384	381				3
		Unknown			8	3				
Alpena	118	Totals	15,581	3.2	503	503				
		Males	8,182	3.3	273	273				
		Females	7,399	3.1	230	230				
Antrim	99	Totals	10,413	2.2	230	228	2			
		Males	5,678	2.0	118	112	1			
		Females	4,785	2.4	115	114	1			
		Unknown			2	2				
Arenac	83	Totals	5,688	2.4	185	183			2	
		Males	3,048	2.0	61	60			1	
		Females	2,635	2.8	74	78			1	
Baraga	140	Totals	3,036	3.2	96	84			12	
		Males	1,755	3.2	56	52			4	
		Females	1,281	3.1	40	32			8	
Barry	95	Totals	23,783	1.7	394	394				
		Males	12,427	1.6	192	192				
		Females	11,356	1.8	201	201				
		Unknown			1	1				

* Two white and Indian.

VITAL STATISTICS OF MICHIGAN, 1891.

TABLE 6.—CONTINUED.—*Births by counties, by sex, and by color.*

County.	Births—males to 100 females.	Sex.	Population by U. S. census of 1890.	Per cent of births of each sex to population of same sex.	Color—children born in 1891.					
					Total of all colors.	White.	Black.	Mulatto.	Indian.	Unknown.
Bay.....	106	Totals.....	56,412	2.9	1,637	1,637				
		Males.....	29,602	2.9	843	843				
		Females.....	26,810	2.6	794	794				
Benzie.....	106	Totals.....	5,237	2.6	138	137	1			
		Males.....	2,807	2.5	71	70	1			
		Females.....	2,430	2.7	67	67				
Berrien.....	104	Totals.....	41,285	1.4	565	558	2			5
		Males.....	20,939	1.4	286	283	1			2
		Females.....	20,346	1.4	276	273	1			2
		Unknown.....			3	2				1
Branch.....	132	Totals.....	26,791	1.6	426	425	1			
		Males.....	13,461	1.8	242	241	1			
		Females.....	13,330	1.4	183	183				
		Unknown.....			1	1				
Calhoun.....	102	Totals.....	43,501	1.4	605	600	3		1	1
		Males.....	21,791	1.4	306	304	2			
		Females.....	21,710	1.4	299	296	1		1	1
		Unknown.....			297	272	6	18	1	
Cass.....	115	Totals.....	20,953	1.4	297	272	6	18	1	
		Males.....	10,801	1.5	159	153	2	4		
		Females.....	10,152	1.4	138	119	4	14	1	
		Unknown.....			162	160			2	
Charlevoix.....	105	Totals.....	9,686	1.7	162	160			2	
		Males.....	5,172	1.6	83	82			a 1	
		Females.....	4,514	1.8	79	78			1	
		Unknown.....								
Cheboygan.....	134	Totals.....	11,986	2.3	285	285				
		Males.....	6,508	2.5	163	163				
		Females.....	5,478	2.2	122	122				
		Unknown.....								
Chippewa.....	116	Totals.....	12,019	1.9	226	224			2	
		Males.....	6,606	1.8	120	120				
		Females.....	5,413	1.9	103	101			b 2	
		Unknown.....			3	3				
Clare.....	129	Totals.....	7,338	2.1	157	157				
		Males.....	4,286	2.1	86	88				
		Females.....	3,272	2.1	69	69				
		Unknown.....								
Clinton.....	124	Totals.....	26,509	1.8	473	472				1
		Males.....	13,515	1.9	262	261				1
		Females.....	12,941	1.6	211	211				
		Unknown.....								

a One white and Indian. b Two white and Indian.

BIRTHS BY COUNTIES, BY SEX AND BY COLOR.

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TABLE 6.—CONTINUED.—*Births by counties, by sex, and by color.*

Counties.	Births—males to 100 females.	Sex.	Population by U. S. census of 1890.	Per cent of births of each sex to population of same sex.	Color—children born in 1891.					
					Total of all colors.	White.	Black.	Mulatto.	Indian.	Unknown.
Crawford.....	178	Totals	2,962	1.7	50	50				
		Males.....	1,885	1.7	32	32				
		Females.....	1,077	1.7	18	18				
Delta	118	Totals	15,380	2.8	427	423			4	
		Males.....	8,840	2.5	229	228			1	
		Females.....	6,481	2.9	194	191			3	
		Unknown.....			4	4				
Dickinson a.....	132	Totals			557	557				
		Males.....			317	317				
		Females.....			240	240				
Eaton.....	92	Totals	32,084	1.5	475	473	2			
		Males.....	16,274	1.4	227	226	1			
		Females.....	15,820	1.6	247	246	1			
		Unknown.....			1	1				
Emmet	118	Totals	8,756	1.5	132	106			24	2
		Males.....	4,515	1.5	69	56			13	
		Females.....	4,241	1.4	61	50			11	
		Unknown.....			2					2
Genesee.....	112	Totals	39,430	1.5	585	577	6	1	1	
		Males.....	19,916	1.5	309	305	4			
		Females.....	19,484	1.4	276	272	2	1	1	
Gladwin.....	90	Totals	4,208	.5	19	19				
		Males.....	2,553	.4	9	9				
		Females.....	1,655	.6	10	10				
Gogebic	96	Totals	13,166	3.8	501	501				
		Males.....	8,690	2.8	245	245				
		Females.....	4,476	5.7	254	254				
		Unknown.....			2	2				
Grand Traverse.....	103	Totals	13,855	2.2	296	296	1			
		Males.....	7,164	2.1	150	150				
		Females.....	6,191	2.3	146	145	1			
Gratiot.....	108	Totals	28,668	1.7	486	486				
		Males.....	14,902	1.7	252	252				
		Females.....	13,766	1.7	233	233				
		Unknown.....			1	1				

a Not organized in 1890. See estimate of population and birth-rate for 1891 in Exhibit G, Part I.

VITAL STATISTICS OF MICHIGAN, 1891.

TABLE G. - CONTINUED. - *Births by counties, by sex, and by color.*

County.	Births—males to 100 females.	Sex.	Population by U. S. census of 1890.	Per cent of births of each sex to population of same sex.	Color—children born in 1891.					
					Total of all colors.	White.	Black.	Mulatto.	Indian.	Unknown.
Hillsdale.	182	Totals	80,680	1.3	394	394				
		Males	15,341	1.5	223	223				
		Females	15,319	1.1	169	169				
		Unknown			2	2				
Houghton.	109	Totals	85,380	4.3	1,530	1,528				2
		Males	19,553	4.1	798	798				
		Females	15,986	4.6	730	729				1
		Unknown			2	1				1
Huron.	182	Totals	28,345	2.8	792	792				
		Males	14,806	3.0	450	450				
		Females	13,649	2.5	341	341				
		Unknown			1	1				
Ingham.	101	Totals	37,666	1.6	601	590	5	2		1
		Males	19,409	1.6	302	298	5	1		1
		Females	18,257	1.6	298	294	3	1		
		Unknown			1	1				
Ionia.	98	Totals	32,801	1.6	331	331				
		Males	18,819	1.5	238	238				
		Females	13,982	1.7	100	97				
		Unknown			3	3				
Iosco.	127	Totals	18,324	2.1	315	315				
		Males	8,340	2.1	177	177				
		Females	9,984	2.1	142	142				
		Unknown								
Isabella.	123	Totals	4,432							
		Males	2,788							
		Females	1,644							
		Unknown								
Jackson.	123	Totals	18,784	1.1	30	37			14	
		Males	9,88	1.1	17	17			5	
		Females	8,906	1.1	13	20			9	
		Unknown								
Kalamazoo.	123	Totals	65,381	1.3	82	82				1
		Males	33,866	1.3	48	48				1
		Females	31,515	1.3	34	34				
		Unknown								
Kalamazoo.	123	Totals	65,381	1.3	82	82				1
		Males	33,866	1.3	48	48				1
		Females	31,515	1.3	34	34				
		Unknown								

a No returns of births for 1891.

BIRTHS BY COUNTIES, BY SEX AND BY COLOR.

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TABLE 6.—CONTINUED.—*Births by counties, by sex, and by color.*

Counties.	Births—males to 100 females.	Sex.	Population by U. S. census of 1890.	Per cent of births of each sex to popula- tion of same sex.	Color—children born in 1891.				
					Total of all colors.	White.	Black.	Mulatto.	Indian.
Kalkaska.....	117	Totals	5,160	2.4	136	136			
		Males.....	2,915	2.3	68	68			
		Females.....	2,245	2.6	58	58			
Kent.....	104	Totals	109,922	2.1	2,349	2,338	5		6
		Males.....	56,267	2.1	1,186	1,182	3		1
		Females.....	53,655	2.1	1,144	1,142	2		
		Unknown			19	14			5
Keweenaw.....	79	Totals	2,894	4.6	134	134			
		Males.....	1,630	3.6	59	59			
		Females.....	1,264	5.9	75	75			
Lake.....	69	Totals	6,505	1.3	86	86			
		Males.....	3,755	.9	35	35			
		Females.....	2,750	1.8	51	51			
Lapeer.....	109	Totals	29,213	1.6	470	469			1
		Males.....	15,034	1.6	245	244			1
		Females.....	14,179	1.6	225	225			
Leelanau.....	95	Totals	7,944	2.5	197	182			15
		Males.....	4,287	2.2	96	89			7
		Females.....	3,657	2.8	101	93			8
Lenawee.....	110	Totals	43,448	1.5	708	698	8		2
		Males.....	23,914	1.5	371	366	4		1
		Females.....	24,534	1.4	336	332	4		
		Unknown			1				1
Livingston.....	94	Totals	20,858	1.5	315	314	1		
		Males.....	10,748	1.4	153	152	1		
		Females.....	10,110	1.6	162	162			
Luce.....	81	Totals	2,455	2.4	58	58			
		Males.....	1,603	1.6	26	26			
		Females.....	852	3.3	32	32			
Mackinac.....	100	Totals	7,830	.9	70	68			2
		Males.....	4,637	.8	35	33			a 2
		Females.....	3,193	1.0	35	35			
Macomb.....	110	Totals	31,813	1.3	587	585		1	1
		Males.....	16,201	1.9	308	308			
		Females.....	15,612	1.3	279	277		1	1

a One white and Indian.

VITAL STATISTICS OF MICHIGAN, 1891.

TABLE 6. CONTINUED. *Births by counties, by sex, and by color.*

County.	Births—males to 100 females.	Sex.	Population by U. S. census of 1890.	Per cent of births of each sex to population of same sex.	Color—children born in 1891.					
					Total of all colors.	White.	Black.	Mulatto.	Indian.	Unknown.
Manistow	115	Totals ..	24,230	2.6	627	627				
		Males ..	12,923	2.6	336	336				
		Females ..	11,307	2.6	291	291				
Manitou	71	Totals ..	860	1.4	12	12				
		Males ..	479	1.0	5	5				
		Females ..	381	1.8	7	7				
Marquette	191	Totals ..	39,521	3.1	1,244	1,242	1		1	
		Males ..	22,927	2.7	624	623			1	
		Females ..	16,594	3.7	620	619	1			
Mason	104	Totals ..	16,385	2.5	418	418				
		Males ..	8,778	2.4	213	213				
		Females ..	7,607	2.7	205	205				
Massena	112	Totals ..	19,687	1.9	48	47	1	3		
		Males ..	11,826	1.9	24	24	1	2		
		Females ..	7,861	1.9	24	23		1		
Mason	104	Totals ..	63,688	1.3	774	774				
		Males ..	32,687	1.4	384	384				
		Females ..	31,001	1.2	390	390				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
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		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				
		Males ..	5,707	2.3	128	128				
		Females ..	5,100	2.1	110	110				
Mason	104	Totals ..	10,807	2.2	238	238				

BIRTHS BY COUNTIES, BY SEX AND BY COLOR.

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TABLE 6.—CONTINUED.—*Births by counties, by sex, and by color.*

Counties.	Births—males to 100 females.	Sex.	Population by U. S. census of 1890.	Per cent of births of each sex to popula- tion of same sex.	Color—children born in 1891.					
					Total of all colors.	White.	Black.	Mulatto.	Indian.	Unknown.
Muskegon	101	Totals	40,018	2.7	1,064	1,061	2		1	
		Males	20,927	2.5	532	530	2			
		Females	19,086	2.2	524	523			1	
		Unknown			8	8				
Newaygo	103	Totals	20,476	1.8	374	374				
		Males	11,350	1.7	190	190				
		Females	9,126	2.0	184	184				
Oakland	99	Totals	41,245	1.2	513	513				
		Males	20,984	1.2	254	254				
		Females	20,261	1.3	257	257				
		Unknown			2	2				
Oceana	103	Totals	15,698	1.9	295	294			1	
		Males	8,362	1.8	150	150				
		Females	7,336	1.9	145	144			a 1	
Ogemaw	94	Totals	5,533	1.9	105	105				
		Males	3,396	1.5	51	51				
		Females	2,135	2.4	54	54				
Ontonagon	111	Totals	3,756	1.6	61	61				
		Males	2,342	1.3	31	31				
		Females	1,414	2.0	28	28				
		Unknown			2	2				
Osceola	107	Totals	14,630	2.4	346	346				
		Males	7,868	2.3	179	179				
		Females	6,762	2.4	167	167				
Oscoda	62	Totals	1,904	1.5	34	34				
		Males	1,165	1.1	18	18				
		Females	739	2.8	21	21				
Otsego	108	Totals	4,272	1.5	67	67				
		Males	2,410	1.4	34	34				
		Females	1,862	1.8	33	33				
Ottawa	107	Totals	35,358	2.4	841	839		1	1	
		Males	18,341	2.4	435	434			1	
		Females	17,017	2.3	406	405		1		
Presque Isle	135	Totals	4,687	2.5	122	122				
		Males	2,581	2.7	70	70				
		Females	2,106	2.5	52	52				

VITAL STATISTICS OF MICHIGAN, 1891.

TABLE C. CONTINUED. *Births by counties, by sex, and by color.*

County.	Births in 1891.	Sex.	Population by U. S. census of 1890.	Percent of births of each sex to population of same sex.	Color—children born in 1891.				
					Total of all colors.	White.	Black.	Mulatto.	Indian.
Benjamin	150	Totals.	2,083	1.2	25	25			
		Males.	1,801	1.2	15	15			
		Females.	782	1.4	10	10			
Benjamin	108	Totals.	82,273	2.4	2,010	2,007	3		
		Males.	42,917	2.4	1,041	1,040	1		
		Females.	39,356	2.4	968	966	2		
Benjamin	108	Unknown.			1	1			
		Totals.	82,389	2.4	777	778			1
		Males.	47,008	2.4	400	400			
Benjamin	108	Females.	45,381	2.4	375	375			
		Unknown.			1				1
Benjamin	108	Totals.	92,378	2.7	47	46			1
		Males.	55,584	2.7	47	47			
		Females.	36,794	2.8	30	29			1
Benjamin	108	Totals.	8,072	1.4	45	45			
		Males.	4,000	1.7	21	21			
		Females.	4,072	1.7	24	24			
Benjamin	108	Totals.	4,072	1.7	1	1			
		Males.	2,000	1.7	1	1			
		Females.	2,072	1.7	1	1			
Benjamin	108	Totals.	1,000	1.7	1	1			
		Males.	500	1.7	1	1			
		Females.	500	1.7	1	1			
Benjamin	108	Totals.	1,000	1.7	1	1			
		Males.	500	1.7	1	1			
		Females.	500	1.7	1	1			
Benjamin	108	Totals.	1,000	1.7	1	1			
		Males.	500	1.7	1	1			
		Females.	500	1.7	1	1			
Benjamin	108	Totals.	1,000	1.7	1	1			
		Males.	500	1.7	1	1			
		Females.	500	1.7	1	1			
Benjamin	108	Totals.	1,000	1.7	1	1			
		Males.	500	1.7	1	1			
		Females.	500	1.7	1	1			
Benjamin	108	Totals.	1,000	1.7	1	1			
		Males.	500	1.7	1	1			
		Females.	500	1.7	1	1			
Benjamin	108	Totals.	1,000	1.7	1	1			
		Males.	500	1.7	1	1			
		Females.	500	1.7	1	1			

BIRTHS—PARENT NATIVITY.

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TABLE 6.—CONCLUDED.—*Births by counties, by sex, and by color.*

Counties.	Births—males to 100 females.	Sex.	Population by U. S. census of 1890.	Per cent of births of each sex to population of same sex.	Color—children born in 1891.				
					Total of all colors.	White.	Black.	Mulatto.	Indian.
Wayne	113	Totals	257,114	5.3	13,632	13,590	102		
		Males	127,765	5.6	7,201	7,146	55		
		Females	129,349	5.0	6,388	6,342	41		
		Unknown			48	42	6		
Wexford	106	Totals	11,278	2.7	303	303			
		Males	6,010	2.6	156	156			
		Females	5,268	2.8	147	147			

In Table 7 a decrease in the per cent of native parents appears with a corresponding rise in that of foreign-born parents. The numbers of children born of native and foreign-born parents are now nearly the same, with the probability, if the present rate of change continues, of the latter being in excess in another year for the first time in the history of the State registration.

TABLE 7.—*Showing, by sex, the parent nativity of children born in Michigan during the year 1891, according to the returns.*

Nativity of parents of children born, 1891.	Total births, 1891.							
	Number.				Per cent of total.			
	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Unknown.
All nativities	50,812	28,489	24,246	127	100.0	100.0	100.0	100.0
Both parents native born	20,425	10,557	9,832	36	40.2	39.9	40.6	28.3
Both parents foreign born	20,272	10,635	9,608	29	39.9	40.2	39.6	22.8
Foreign father and native mother	5,428	2,849	2,578	6	10.7	10.8	10.6	4.7
Foreign mother and native father	3,119	1,617	1,499	3	6.1	6.1	6.2	2.4
Unknown mother, father native	293	145	142	6	.8	.8	.6	4.7
Unknown mother, father foreign	242	135	107		.5	.5	.4	
Unknown father, mother native	195	84	97	14	.4	.3	.4	11.0
Unknown father, mother foreign	92	40	44	8	.2	.2	.2	6.8
Both unknown	746	377	344	25	1.4	1.4	1.4	19.7
One or both native	29,460	15,252	14,143	65	58.0	57.6	58.2	51.2
One or both foreign	29,153	15,276	13,881	46	57.4	57.8	57.0	36.2

VITAL STATISTICS OF MICHIGAN, 1891.

These changes are also shown in Table 8, from which it appears that the number of foreign fathers has been, since 1889, in excess of the number of native fathers. The number of native mothers is still greater than the number of foreign mothers but the difference is becoming less each year.

TABLE 8.—*Parent nativity of children born in Michigan for each of the years 1889-1891, and the average for ten years, 1881-1890.*

Nativity of parents of children born.	1889.		1890.		1891.		Average for 10 years, 1881-1890.	
	Num-ber.	Per cent of total.	Num-ber.	Per cent of total.	Num-ber.	Per cent of total.	Num-ber.	Per cent of total.
All nativities.....	49,272	100.0	52,306	100.0	50,812	100.0	48,296	100.0
Both native born	20,579	41.8	21,866	41.8	20,425	40.2	18,657	43.1
Both foreign born	19,189	39.0	20,076	38.4	20,272	39.8	15,918	36.8
Foreign father and native mother.....	5,254	10.7	5,643	10.8	5,428	10.8	4,806	11.1
Foreign mother and native father.....	2,952	6.0	3,157	6.0	3,119	6.1	2,679	6.2
One or both unknown.....	1,298	2.6	1,564	3.0	1,568	3.1	1,236	2.8
One or both parents native a	28,785	58.4	30,066	58.4	28,972	57.0	26,142	60.4
One or both parents foreign a	27,395	55.6	28,876	55.2	28,819	56.8	23,408	54.1
Father { Native	23,674	48.1	25,269	48.3	23,837	46.9	21,493	49.7
Foreign	21,559	49.9	25,909	49.5	25,942	51.0	20,823	48.1
Unknown	1,089	2.1	1,128	2.2	1,038	2.1	990	2.2
Mother { Native	18,039	52.9	27,756	53.1	26,048	51.3	23,664	54.7
Foreign	22,236	45.1	23,331	44.6	23,483	46.2	18,638	43.2
Unknown	995	2.0	1,219	2.3	1,281	2.5	944	2.1

a Excluding cases where nativity of either parent is unknown.

Table 9 exhibits for each county the nativity of the parents of children born in 1 For the State, the number of parents both native-born is very slightly in excess of those of foreign birth, but in many counties, especially those of the upper peninsula and those containing large cities, the parents of foreign birth greatly outnumber the native born parents. In the southern portion of the State and among the older settled counties where the birth-rate is small, the reverse is generally true, and the foreign parents are in the minority.

VITAL STATISTICS OF MICHIGAN, 1891.

TABLE 9. CONTINUED.—*Births by counties, parent nativity, and sex.*

Nativity of parents of children born in 1891.											
County.	Sex.	Children born 1891.	Both native born.	Both foreign born.	Foreign father and native mother.	Foreign mother and native father.	Mother unknown.		Father unknown.		Both unknown.
							Father.		Mother.		
							Native.	Foreign.	Native.	Foreign.	
Bay	Totals	1,687	384	872	224	128	—	4	6	3	17
	Males	843	202	439	116	66	—	3	3	2	12
	Females	794	182	433	108	62	—	1	3	—	5
Benzie	Totals	138	85	30	15	7	1	—	—	—	—
	Males	71	44	17	5	5	—	—	—	—	—
	Females	67	41	13	10	2	1	—	—	—	—
Berrien	Totals	505	286	88	43	35	4	1	3	—	—
	Males	286	196	45	18	17	3	—	1	—	6
	Females	276	187	40	25	18	1	1	2	—	2
	Unknown	3	3	—	—	—	—	—	—	—	—
Branch	Totals	426	351	40	20	9	—	—	4	—	2
	Males	242	197	22	13	6	—	—	2	—	2
	Females	183	153	18	7	3	—	—	2	—	—
	Unknown	1	1	—	—	—	—	—	—	—	—
Calhoun	Totals	645	429	22	48	27	23	4	2	—	4
	Males	346	208	22	24	14	18	2	—	—	1
	Females	299	221	22	24	13	5	2	2	—	3
Charlevoix	Totals	297	238	5	18	4	6	—	4	—	7
	Males	151	141	2	8	2	4	—	1	—	1
	Females	138	117	4	10	2	2	—	3	—	—
Chippewa	Unknown	131	7	36	22	18	3	—	1	—	3
	Males	87	45	15	18	6	1	—	—	—	2
	Females	1	3	11	2	2	2	—	1	—	1
Crawford	Unknown	187	84	111	5	26	—	4	2	—	—
	Males	108	57	52	2	12	—	2	—	—	—
	Females	79	27	59	3	14	—	2	2	—	—
Custer	Totals	2	88	23	28	24	1	2	2	1	4
	Unknown	2	—	2	2	12	1	2	1	1	1
	Females	1	—	6	2	12	3	4	4	—	3
Delta	Unknown	1	—	5	—	—	—	—	—	—	—
	Totals	2	2	8	—	2	1	2	5	—	24
	Males	88	—	2	—	—	—	—	4	—	10
Eaton	Females	6	—	1	8	—	—	—	2	—	14

BIRTHS BY COUNTIES, PARENT NATIVITY AND SEX. 63

TABLE 9.—CONTINUED.—*Births by counties, parent nativity, and sex.*

Counties.	Sex.	Children born 1891.	Nativity of parents of children born in 1891.								
			Both native born.	Both foreign born.	Foreign father and native mother.	Foreign mother and native father.	Mother unknown.		Father unknown.		Both unknown.
							Father.		Mother.		
							Native.	Foreign.	Native.	Foreign.	
Clinton	Totals	478	346	46	51	18	2		3	1	6
	Males	262	189	26	31	8	2		1		5
	Females	211	157	20	20	10			2	1	1
Crawford	Totals	50	20	20	7	3					
	Males	32	13	13	4	2					
	Females	18	7	7	3	1					
Delta	Totals	427	104	202	56	26	6	24	1	1	7
	Males	229	54	107	28	16	4	15	1	1	3
	Females	194	50	92	28	10	2	9			3
	Unknown	4		3							1
Dickinson	Totals	557	42	464	27	9	1	12	1	1	
	Males	317	24	264	17	5	1	5		1	
	Females	240	18	200	10	4		7	1		
Eaton	Totals	475	402	12	26	12	5		1		17
	Males	227	194	6	12	5	1				9
	Females	247	207	6	14	7	4		1		8
	Unknown	1	1								
Emmet	Totals	132	72	34	9	10			1	1	5
	Males	69	38	19	4	6				1	1
	Females	61	34	15	5	4			1		2
	Unknown	2									2
Genesee	Totals	585	413	54	67	42	3		3		3
	Males	309	220	28	33	23	2		2		1
	Females	276	193	26	34	19	1		1		2
Gladwin	Totals	19	12	2	3	2					
	Males	9	5	1	3						
	Females	10	7	1		2					
Gogebic	Totals	501	44	394	32	18	1		1	2	9
	Males	245	21	194	15	8			1		6
	Females	254	23	199	17	10	1			2	2
	Unknown	2		1							1
Gd. Traverse	Totals	296	157	68	33	25	1	2	8	1	1
	Males	150	75	35	17	17		2	4		
	Females	146	82	33	16	8	1		4	1	1

VITAL STATISTICS OF MICHIGAN, 1891.

TABLE 9. CONTINUED. *Births by counties, parent nativity, and sex.*[illegible]

BIRTHS BY COUNTIES, PARENT NATIVITY AND SEX.

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TABLE 9.—CONTINUED.—*Births by counties, parent nativity, and sex.*

Counties.	Sex.	Children born 1891.	Nativity of parents of children born in 1891.								Both unknown.
			Both native born.	Both foreign born.	Foreign father and native mother.	Foreign mother and native father.	Mother unknown.		Father unknown.		
							Father.		Mother.		
							Native.	Foreign.	Native.	Foreign.	
Jackson	Totals	602	393	97	53	40	14	1			4
	Males	308	215	41	23	22	5				2
	Females	294	178	56	30	18	9	1			2
Kalamazoo	Totals	748	475	150	69	38	2	1			13
	Males	409	266	81	33	16	1				12
	Females	337	208	68	36	22	1	1			1
Kalamazoo	Unknown	2	1	1							
	Totals	126	79	11	24	10					2
	Males	68	39	5	17	5					2
Kalamazoo	Females	58	40	6	7	5					
	Totals	2,349	976	920	218	146	2	2	19	5	61
	Males	1,186	486	476	106	72	1	1	9	1	34
Kent	Females	1,144	438	438	112	74	1	1	7	3	20
	Unknown	19	2	6					3	1	7
	Totals	134	16	97	19	2					
Keweenaw	Males	59	7	42	9	1					
	Females	75	9	55	10	1					
	Totals	86	39	19	11	14		2	1		
Lake	Males	35	17	8	6	3		1			
	Females	51	22	11	5	11		1	1		
	Totals	470	228	102	89	47	1	2	1		
Lapeer	Males	245	119	53	48	24	1				
	Females	225	109	49	41	23		2	1		
	Totals	197	79	54	36	15	1	1	2	1	8
Leelanau	Males	96	37	29	20	6			1	1	2
	Females	101	42	25	16	9	1	1	1		6
	Totals	708	550	76	44	35	2	1	4		2
Lenawee	Males	371	290	31	26	21	1		2		
	Females	336	259	39	18	14	1	1	2		2
	Unknown	1	1								
Livingston	Totals	315	244	25	19	19	8				
	Males	153	115	11	12	12	3				
	Females	162	129	14	7	7	5				

TABLE 9.—CONTINUED.—*Births by counties, parent nativity, and sex.*

Counties.	Sex.	Children born 1891.	Nativity of parents of children born in 1891.							
			Both native born.	Both foreign born.	Foreign father and native mother.	Foreign mother and native father.	Mother unknown.		Father unknown.	
							Father.		Mother.	
							Native.	Foreign.	Native.	Foreign.
Ipswich	Totals	58	9	28	1	6		1		13
	Males	26	5	11		6				4
	Females	32	4	17	1			1		9
MacKinnon	Totals	70	24	28	9	2		2		3
	Males	35	12	15	4			1		1
	Females	35	12	13	5	2		1		2
Macomb	Totals	587	315	116	78	47	23	6		1
	Males	308	166	83	38	26	12	3		
	Females	279	149	53	40	21	11	3		1
Manistee	Totals	627	107	413	64	30	5	2	3	3
	Males	386	59	222	35	13	3	1	1	2
	Females	291	48	191	29	17	2	1	2	1
Manitou	Totals	12	3	3	5	1				
	Males	5	1	2	2					
	Females	7	2	1	3	1				
Marquette	Totals	1,244	105	979	97	33		3	3	14
	Males	624	54	495	46	14		1	1	7
	Females	620	51	484	51	19		2	2	7
Mason	Totals	418	111	215	55	34		3		
	Males	213	61	107	28	16		1		
	Females	205	50	108	27	18		2		
Mecosta	Totals	380	193	108	43	22	3	2	1	2
	Males	201	107	54	21	13	3	1	1	1
	Females	179	86	54	22	13		1		1
Meridian	Totals	554	87	323	98	23		19		1
	Males	288	45	166	53	8	1	13		
	Females	265	42	156	45	15	7	6		1
Midland	Unknown	1		1						
	Totals	228	106	89	37	23			2	1
	Males	128	57	36	21	12			1	1
Missaukee	Females	110	49	53	16	11			1	
	Totals	147	29	82	35	5	3			
	Males	81	14	48	12	5	2			
Missaukee	Females	66	15	34	13	3	1			

BIRTHS BY COUNTIES, PARENT NATIVITY AND SEX.

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TABLE 9.—CONTINUED.—*Births by counties, parent nativity, and sex.*

Counties.	Sex.	Children born 1891.	Nativity of parents of children born in 1891.							
			Both native born.	Both foreign born.	Foreign father and native mother.	Foreign mother and native father.	Mother unknown.		Father unknown.	
							Father.		Mother.	
							Native.	Foreign.	Native.	Foreign.
Monroe	Totals	737	586	54	59	33	1		3	
	Males	370	300	22	31	14			3	
	Females	366	285	32	28	19	1			1
	Unknown	1	1							
Montcalm	Totals	596	377	113	60	37	1	4	1	1
	Males	301	185	60	32	17	1	4		1
	Females	294	191	53	28	20			1	1
	Unknown	1	1							
Montmorency	Totals	18	5	11	1	1				
	Males	10	3	6		1				
	Females	8	2	5	1					
Muskegon	Totals	1,064	801	548	117	84	2	3	2	7
	Males	532	159	263	57	46	2	2	1	2
	Females	524	139	283	59	38		1	1	3
	Unknown	8	3	2	1					2
Newaygo	Totals	374	200	90	48	20	3	3	2	8
	Males	190	101	47	26	11		1	1	3
	Females	184	99	43	22	9	3	2	1	5
Oakland	Totals	513	359	64	37	47	2		2	2
	Males	254	171	31	25	26			1	
	Females	257	188	31	12	21	2		1	2
	Unknown	2		2						
Oceana	Totals	295	161	41	22	23	4	1	6	37
	Males	150	79	22	11	12	3		2	27
	Females	145	82	19	11	11	1	1	4	16
Ogemaw	Totals	105	44	44	6	6	2			1
	Males	51	19	24	2	2	1			1
	Females	54	25	20	4	4	1			
Ontonagon	Totals	61	26	14	8	1	3	1	3	5
	Males	31	14	7	3	1	2	1	2	1
	Females	28	12	7	5				1	3
	Unknown	2					1			1
Osceola	Totals	346	189	106	44	23			2	2
	Males	179	79	59	26	13			1	1
	Females	167	90	47	18	10			1	1

TABLE 9.—CONTINUED.—*Births by counties, parent nativity, and sex.*

Counties.	Sex.	Children born 1891.	Nativity of parents of children born in 1891.								
			Both native born.	Both foreign born.	Foreign father and native mother.	Foreign mother and native father.	Mother unknown.		Father unknown.		Both unknown.
							Father.		Mother.		
							Native.	Foreign.	Native.	Foreign.	
Oscoda	Totals	84	18	5	8	3					
	Males	18	7	2	3	1					
	Females	21	11	3	5	2					
Otsego	Totals	67	13	7	10	7	11	16	1		2
	Males	34	8	4	3	3	3	10	1		2
	Females	33	5	3	7	4	8	6			
Ottawa	Totals	841	290	347	110	74	2	5	3	3	7
	Males	435	146	184	52	40	1	4	2	2	4
	Females	406	144	163	58	34	1	1	1	1	3
Presque Isle	Totals	122	11	92	14	2		1			2
	Males	70	6	52	10			1			1
	Females	52	5	40	4	2					1
Roscommon	Totals	25	7	10	5	3					
	Males	15	4	6	3	2					
	Females	10	3	4	2	1					
Saginaw	Totals	2,010	738	750	306	178	4	1	2	4	27
	Males	1,041	361	382	175	102	2			2	17
	Females	968	376	368	131	76	2	1	2	2	10
	Unknown	1	1								
Sanilac	Totals	777	123	387	154	106	1		2	4	
	Males	400	63	210	80	44	1		1	1	
	Females	376	60	177	74	61			1	3	
	Unknown	1				1					
Schoolcraft	Totals	97	22	55	12	7					1
	Males	47	8	27	6	5					1
	Females	50	14	28	6	2					
Shiawassee	Totals	434	269	61	45	41	10	4	2	1	1
	Males	202	135	30	18	21	2	2	1	1	1
	Females	232	144	31	27	20	6	2	1		
	Unknown	2					2				
St. Clair	Totals	1,134	608	275	154	135	5	3		2	6
	Males	624	325	213	88	75	3	1			
	Females	509	283	160	66	60	2	2		2	6

BIRTHS BY COUNTIES, PARENT NATIVITY AND SEX.

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TABLE 9.—CONCLUDED.—*Births by counties, parent nativity, and sex.*

Counties.	Sex.	Children born 1891.	Nativity of parents of children born in 1891.							
			Both native born.	Both foreign born.	Foreign father and native mother.	Foreign mother and native father.	Mother unknown.		Father unknown.	
							Father.		Mother.	
							Native.	Foreign.	Native.	Foreign.
St. Joseph	Totals	365	277	35	20	13	5		1	
	Males	203	153	17	13	7	3		1	
	Females	162	124	18	7	6	2			
Tuscola	Totals	558	263	127	93	67	1		4	1
	Males	277	126	63	49	33	1		3	1
	Females	281	137	64	44	34			1	
Van Buren	Totals	452	401	5	24	16			2	
	Males	221	192	3	13	9			1	
	Females	227	205	2	11	7			1	
	Unknown	4	4							
Washtenaw	Totals	534	314	106	56	35	12	2	5	4
	Males	287	173	52	28	19	8	2	2	3
	Females	245	141	53	27	16	4		3	1
	Unknown	2		1	1					
Wayne	Totals	13,632	3,343	7,420	1,278	660	21	29	37	29
	Males	7,201	2,043	3,932	690	339	10	19	12	7
	Females	6,383	1,790	3,484	585	318	10	10	15	15
	Unknown	48	10	4	3	3	1		10	7
Wexford	Totals	303	140	110	25	22	2	1		1
	Males	156	81	51	10	10	1	1		
	Females	147	59	59	15	12	1			1

Table 10 shows the distribution of twins, illegitimates, and still-births through the State. Nearly one-half of all the illegitimates reported are from the county of Wayne, which includes the city of Detroit.

TABLE 10.—*Number of pairs of twins, illegitimate children and still-births born in Michigan during the year 1891, by counties.*

State and counties.	Number of pairs of twins born in 1891.	Number of illegitimate children born in 1891.	Number of still-births in 1891.	Counties.	Number of pairs of twins born in 1891.	Number of illegitimate children born in 1891.	Number of still-births in 1891.
State	677	399	1,090	Huron	11	8	22
				Ingham	6		22
Alcona			2	Ionia	8	2	7
Algon				Iosco	6	1	
Allegan	6	6	16	Iron			
Alpena	5	1	3	Isabella	3	3	6
Antrim	2	1	3	Jackson	4	1	15
Arenac	1	2	1	Kalamazoo	9	2	11
Baraga		2	1	Kalkaska	3		6
Barry	1	2	9	Kent	19	26	49
Bay	14	5	19	Keweenaw	1	1	7
Benzie	2		5	Lake			
Berrien	6	2	11	Lapeer	5	3	3
Branch	5	7	5	Leelanau	1	4	3
Calhoun	8	3	14	Lenawee	7	3	11
Cass	2	6	2	Livingston	4		6
Charlevoix	1		3	Loce	1		3
Chesogan	4	3	1	Mackinac		1	1
Chippewa	1	5		Macomb	4	2	13
Chester	3	3	2	Manistee	4		20
Clinton	6	2	5	Marion			
Crawford				Marquette	10	17	37
Delta	7	1	14	Mason	6		5
Dickinson	4	3	9	Meewata	4	1	8
Easton	4	1	15	Menominee	5	1	6
Emmet	1	4	2	Midland	7	1	8
Genesee	5	2	9	Missaukee	1	1	2
Gladwin			1	Monroe	13	2	17
Gogebic	5	2	5	Montcalm	4	2	8
Grand Traverse	5	5	5	Montmorency			
Grant	5	5	19	Muskegon	11	2	36
Hillsdale	4	2	2	Newaygo	2	2	9
Houghton	21	3	21	Oakland	5	1	5

BIRTHS OF TWINS BY MONTHS.

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TABLE 10.—Continued.

Counties.	Number of pairs of twins born in 1891.	Number of illegitimate children born in 1891.	Number of still-births in 1891.	Counties.	Number of pairs of twins born in 1891.	Number of illegitimate children born in 1891.	Number of still-births in 1891.
Oceana.....	2	1	7	Sanilac.....	8	6	8
Ogemaw.....		1	2	Schoolcraft.....	2		4
Ontonagon.....		1	4	Shiawassee.....	6		8
Osceola.....	2	3	7	St. Clair.....	13	4	21
Osceola.....			1	St. Joseph.....	4	3	11
Otsego.....		1	4	Tuscola.....	3	7	7
Ottawa.....	13	8	17	Van Buren.....	4	4	17
Presque Isle.....	2		4	Washtenaw.....	8	3	13
Rosecommon.....			1	Wayne.....	286	179	328
Saginaw.....	19	4	58	Wexford.....	3	1	6

The number of twins registered, as shown by Table 11, is somewhat less than the number returned for 1890, and the distribution by months is quite different. April and January show the largest numbers as in 1890, but the latter months of the year show a much greater proportion.

TABLE 11.—Exhibiting, by sex, the number of pairs of twins and twin children returned for the year 1891.

Year and months, 1891.		Number of twin children, 1891.					Number of pairs of twins, 1891.						
		Totals.	Males.	Females.	Males to 100 females.	Unknown.	Totals.	Males.	Females.	One of each sex.	Males to 100, one of each sex.	Males to 100 females.	Unknown.
Year 1891.....		1,354	637	711	90	6	677	197	235	242	81	84	3
More than the av. No. of twins.	April.....	142	74	68	109		71	22	19	30	73	116	
	January.....	138	63	75	84		69	18	24	27	67	75	
	September.....	130	59	71	85		65	22	28	15	147	79	
	August.....	128	65	63	103		64	22	21	21	105	105	
	March.....	124	60	64	94		62	17	19	26	65	90	
Average.....		118	54	59			56	16	20	20			
Less than the average number of twins.	December.....	112	50	60	83	2	56	15	20	20	75	75	1
	February.....	110	54	56	97		55	19	21	15	127	90	
	May.....	110	45	63	71	2	55	12	21	21	57	57	1
	October.....	98	47	51	92		49	13	15	21	62	87	
	November.....	94	45	49	92		47	16	18	13	123	89	
	June.....	90	40	48	84	2	45	12	16	16	75	75	1
	July.....	78	35	43	81		39	9	13	17	53	70	

The parent nativity of twins is discussed in Table 12. The per cent of foreign-born parents is markedly greater as compared with native-born parents than in the case of ordinary births, but is not so great as in 1890. The foreign parentage seems especially to predominate as regards parents of female twins, and this relation holds true in previous years. By subtracting from the total number of children born the number of twin births and twice the number of triplet births, it is evident that we obtain the total number of mothers. This is found to be 50,135 in 1891, and the same process performed with reference to nativity and color enables us to make the comparisons of mothers of twins with total mothers as given in Table 13. Here it appears that foreign-born mothers are the most numerous as mothers of twins, while, as regards color, the somewhat surprising conclusion is reached, which is confirmed by the ten-year average, that mulatto mothers bear the most twins.

TABLE 12.—*Parent nativity of twins returned in Michigan for 1891.*

Nativity of parents of twins, 1891.	Pairs of twins, 1891.									
	Number.					Per cent of each parent nativity to total of all nativities.				
	Totals.	Males.	Females.	One of each.	Unknown.	Totals.	Males.	Females.	One of each.	Unknown.
All nativities.....	677	197	235	242	3	100.0	100.0	100.0	100.0	100.0
Both native born.....	216	69	62	83	2	31.9	35.0	26.4	34.3	66.6
Both foreign born.....	366	98	146	126	1	54.0	47.2	62.1	52.1	33.3
Foreign father and native mother.....	52	20	12	20	—	7.7	10.2	5.1	8.3	—
Foreign mother and native father.....	32	10	12	10	—	4.7	5.0	5.1	4.1	—
Unknown mother, father foreign.....	—	—	—	—	—	—	—	—	—	—
Unknown mother, father native.....	1	—	—	1	—	.2	—	—	.4	—
Unknown father, mother native.....	3	—	2	1	—	.4	—	.9	.4	—
Unknown father, mother foreign.....	1	1	—	—	—	.2	.5	—	—	—
Both unknown.....	6	4	1	1	—	.9	2.0	.4	.4	—
One or both native.....	304	99	88	115	2	44.9	50.2	37.4	47.5	66.6
One or both foreign.....	451	124	170	156	1	66.6	49.8	62.3	52.5	33.3

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TABLE 13.—*By nativity and color of mothers, the number and proportion of twin births returned for the years 1889-1891, and the average for ten years, 1881-1890.*

Nativity and color of mothers of twins, 1889-1891.	1889.			1890.			1891.			Average for 10 years, 1881-1890.		
	Number of pairs of twins.	Whole No. of mothers including those of twins.	Per cent of births of twins to all mothers.	Number of pairs of twins.	Whole No. of mothers including those of twins.	Per cent of births of twins to all mothers.	Number of pairs of twins.	Whole No. of mothers including those of twins.	Per cent of births of twins to all mothers.	Number of pairs of twins.	Whole No. of mothers including those of twins.	Per cent of births of twins to all mothers.
Mothers of all colors and all nativities.....	527	48,727	1.1	771	51,517	1.5	677	50,185	1.4	511	42,771	1.2
All native born mothers.....	252	25,775	1.0	278	27,469	1.0	271	25,777	1.1	251	23,407	1.1
All foreign born mothers.....	274	21,958	1.3	488	22,824	2.1	399	23,084	1.7	252	18,428	1.3
Mothers of unknown nativities.....	1	994	.1	5	1,214	.4	7	1,274	.5	8	986	.9
White.....	517	48,299	1.1	750	50,992	1.5	673	49,812	1.4	501	42,356	1.2
Black.....	5	201	2.5	18	324	5.6	2	178	1.2	5	172	2.6
Mulatto.....	4	65	6.2	1	79	1.3	1	34	2.9	3	93	2.7
Indian.....	1	109	.9	1	107	.9	1	87	1.1	2	116	1.1
Unknown.....		53		1	15	6.7		29			34	.9
Black and mulatto....	9	266	3.4	19	403	4.7	3	207	1.4	8	265	3.0

Of the seven cases of triplets returned, all were white, and the parentage was equally divided between native and foreign.

TABLE 14.—*Exhibiting certain details concerning triplet children returned for the year 1891.*

Counties.	Triplets.					Nativity of parents.
	Month of birth, 1891.	Color.	Sex.			
			Male.	Female.	Un- known.	
Eaton	Dec.	White		3	Both native.	
Monroe	Aug.	White	2	1	Both native.	
Muskegon	Oct.	White	2	1	Foreign mother and native father.	
Sanilac	Dec.	White	1	2	Both foreign.	
St. Joseph	Jan.	White		3	Both native.	
Wayne	Aug.	White	2	1	Both foreign.	
Wayne	Dec.	White	1	2	Both foreign.	

Table 15 shows that births of twins have been relatively more numerous, as compared with total births, both for 1890 and 1891 than for any of the twelve years preceding.

TABLE 15.—*Exhibiting the number of pairs of twins and cases of triplets returned in Michigan for the fourteen years 1878-1891, and the average for these years.*

Years.	Pairs of twins.	Cases of triplets.	No. of births to one pair of twins.	No. of births to one case of triplets.
1878.....	427	3	82	11,721
1879.....	402	2	85	17,061
1880.....	358	5	99	7,065
1881.....	372	5	98	6,950
1882.....	430	9	86	4,114
1883.....	466	9	88	4,534
1884.....	450	4	90	10,102
1885.....	481	7	88	6,017
1886.....	501	6	82	6,849
1887.....	528	5	88	9,245
1888.....	583	3	84	6,119
1889.....	527	6	98	5,212
1890.....	771	6	68	8,718
1891.....	677	7	75	7,259
Average.....	496	6	86	8,140

In Table 16 the parent nativity of all plural births is shown for a period of fourteen years, and the decline in the percentage of native-born parents with the accompanying rise in the percentage of foreign-born parents, which has been already alluded to in speaking of Tables 12 and 13, is well shown.

PARENT NATIVITY OF PLURAL BIRTHS; STILL-BIRTHS.

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TABLE 16.—*Exhibiting the parent nativity of plural births returned in Michigan for the fourteen years, 1878-1891.*

Years.	Totals.	Native born.		Foreign born.		Mixed.		Unknown.	
		Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
1878	863	402	46.6	291	33.7	142	16.5	28	3.3
1879	810	374	46.2	236	29.1	188	23.2	12	1.5
1880	781	341	43.7	276	37.8	104	14.2	10	1.4
1881	759	355	46.8	270	35.6	124	16.3	10	1.3
1882	887	350	39.5	358	40.4	158	17.3	26	2.9
1883	959	417	43.5	364	38.0	150	15.6	28	2.9
1884	912	390	39.5	396	43.4	144	15.8	12	1.3
1885	998	384	39.1	414	42.1	155	15.8	30	3.1
1886	1,020	419	41.1	407	40.0	176	17.3	18	1.8
1887	1,071	448	41.8	423	39.5	168	15.7	32	3.0
1888	1,194	485	40.6	530	44.4	159	13.3	20	1.7
1889	1,072	410	38.3	486	45.3	172	16.0	4	.4
1890	1,561	437	28.0	904	57.9	214	13.7	6	.4
1891	* 1,375	484	31.6	746	54.3	183	13.3	12	.9
Average	1,014	401	40.5	436	41.5	159	16.0	18	2.0

* Includes 7 cases of triplets.

STILL-BIRTHS. 1891.

The total number of still-births returned for 1891 was 1,090. This is a marked decline from the years preceding as shown by Table 17, and is only slightly above the average for 1881-1890. This aggregate includes all cases returned in deaths, as well as in births.

TABLE 17.—*The relation of still-births to all births, and the relation of mothers of still-born children to all mothers returned for the years 1888-1891, and the average for ten years 1881-1890.*

Children and mothers.	Total births and still-births.				
	1888.	1889.	1890.	1891.	Av. for 10 years, 1881-1890.
All children born	48,952	49,272	52,306	50,812	48,296
Still-born children	1,368	1,202	1,397	1,090	1,006
Per cent of still-born to total	2.7	2.4	2.5	2.1	2.3
All mothers	48,350	48,727	51,517	50,121	48,872
Mothers of still-born children	1,322	1,167	1,279	1,086	972
Per cent of mothers of still-born children to all mothers	2.7	2.4	2.5	2.1	2.2

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In Table 18, it will be observed that foreign-born mothers afforded a larger per cent of still-births than native mothers. This was true in 1889 and 1890, and is strongly marked in the ten-year average. In respect to color, the blacks show a much larger percentage for every year than any other color specified.

TABLE 18.—*By nativity and color, the number and proportion of mothers having still-births for the years 1889-1891, and the average for ten years, 1881-1890.*

Nativity and color of mothers.	1889.			1890.			1891.			Average for 10 years, 1881-1890.		
	Mothers having still-births.	Whole No. of mothers including those of still-births.	Per cent of mothers of still-births to all mothers.	Mothers having still-births.	Whole No. of mothers including those of still-births.	Per cent of mothers of still-births to all mothers.	Mothers having still-births.	Whole No. of mothers including those of still-births.	Per cent of mothers of still-births to all mothers.	Mothers having still-births.	Whole No. of mothers including those of still-births.	Per cent of mothers of still-births to all mothers.
Mothers of all colors and all nativities.....	1,167	48,727	2.4	1,279	51,517	2.5	1,036	50,121	2.1	971	42,770	2.3
All native born mothers.....	512	25,570	2.0	507	27,469	1.9	450	25,771	1.4	433	23,406	1.8
All foreign born mothers.....	495	21,861	2.3	542	22,834	2.4	420	23,076	1.8	393	18,428	2.1
Mothers of unknown nativities.....	160	1,296	12.4	230	1,214	19.0	166	1,274	13.0	145	936	15.0
White.....	1,141	48,299	2.4	1,220	50,992	2.4	1,006	49,799	2.0	944	42,855	2.2
Black.....	19	201	9.5	53	324	16.4	14	173	8.1	14	171	8.1
Mulatto.....	3	65	4.6	—	79	—	1	84	2.9	3	98	3.3
Indian.....	—	109	—	—	107	—	1	87	1.1	1	116	.9
Unknown.....	4	58	7.6	6	15	40.0	14	28	50.0	9	35	25.7
Black and mulatto.....	22	266	8.3	53	403	13.2	15	217	6.9	17	264	6.5

By Table 19, the nativities of the parents of still-born children may be compared with those of all children born as exhibited in Table 7. The relatively larger proportion of parents of unknown, that is, not stated, nativity will be noted in the figures concerning still-births.

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TABLE 19.—*Parent nativity of still-born children returned for the year 1891.*

Nativity of parents of still-born children—1891.	Still-born children—1891.							
	Number.				Per cent of each parent nativity to total of all nativities.			
	Totals.	Males.	Fe-males.	Un-known.	Totals.	Males.	Fe-males.	Un-known.
All nativities.....	1,090	583	434	73	100.0	100.0	100.0	100.0
Both native born.....	370	202	145	23	33.9	34.6	33.4	31.5
Both foreign born.....	395	211	169	15	36.2	36.2	38.9	20.6
Foreign father and native mother.....	75	39	33	3	7.0	6.7	7.6	4.1
Foreign mother and native father.....	49	26	22	1	4.5	4.5	5.1	1.4
Unknown mother, father native.....	6	4		2	.6	.7		2.7
Unknown mother, father foreign.....	1		1				.2	
Unknown father, mother native.....	19	3	7	9	1.8	.5	1.6	12.3
Unknown father, mother foreign.....	15	3	4	8	1.4	.5	.9	11.0
Both unknown.....	160	95	53	12	14.6	16.3	12.2	16.4
One or both native.....	519	274	207	38	47.6	47.0	47.7	52.1
One or both foreign.....	535	279	229	27	49.1	47.9	52.8	37.0

Table 20 shows the number of still-births reported for each month. Statements of nativity were formerly made in this table, but as the same facts are shown in the preceding table, it was thought needless to retain them here.

TABLE 20.—*Exhibiting by sex and months, the number of still-births returned in Michigan for the year 1891.*

Sex of still-births, 1891.	Year 1891.	Months, 1891.												
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
Totals.....	1,090	94	82	94	108	96	82	82	98	80	77	83	113	1
Males.....	583	53	41	55	55	50	47	44	55	41	35	46	61	
Females.....	434	37	39	34	47	39	31	27	36	32	35	30	47	
Unknown.....	73	4	2	5	6	7	4	11	7	7	6	7	6	1

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In Table 21 it will be seen that the number of males to 100 females is decidedly larger in still-births than in total births. This ratio varies greatly as regards illegitimates in the two years compared.

TABLE 21.—*Exhibiting the proportion of males to females among children born alive, still-births and illegitimates.*

Number born alive, still-born and illegitimate children.		1890.	1891.	Average for 25 years, 1861-1890.
Born alive.....	Males.....	38,708	38,586	21,943
	Females.....	34,106	34,512	20,340
	Unknown.....	43	54	28
Ratio to 100 females.....		111	109	108
Still-born.....	Males.....	573	568	574
	Females.....	387	434	395
	Unknown.....	13	23	38
Ratio to 100 females.....		158	124	165
Illegitimate.....	Males.....	282	174	175
	Females.....	217	394	182
	Unknown.....	4	11	2
Ratio to 100 females.....		125	128	98

ILLEGITIMATE BIRTHS, 1891.

Fewer illegitimate children were registered in 1891 than in any of the years compared in Table 22. The numbers but slightly in excess of the ten-year average.

TABLE 22.—*The relative of illegitimate children and mothers of illegitimate children to all children born, and to all mothers for the years 1868-1891, and the average for ten years, 1861-1890.*

Number born alive, still-born and illegitimate children.	Total births and illegitimates.				Average for 25 years, 1861-1890.
	1890.	1891.	1892.	1893.	
Born alive.....	72,816	72,816	72,816	72,816	42,596
Still-born.....	590	590	590	590	590
Illegitimate.....	296	296	296	296	296
Ratio to 100 children born.....	1.00	1.00	1.00	1.00	1.00
Ratio to 100 mothers.....	1.00	1.00	1.00	1.00	1.00
Ratio to 100 children born and still-born.....	1.00	1.00	1.00	1.00	1.00
Ratio to 100 mothers born and still-born.....	1.00	1.00	1.00	1.00	1.00

Source: U. S. Census Bureau, 1891.

From Table 23, it would seem that the native-born mothers bear more illegitimate children than the foreign-born. The large per cent of unknowns that enter into this table, the fact that the Indian and colored mothers are classed as natives, and the general unreliability of all statistics based on the small numbers in question, should be taken into consideration.

TABLE 23.—By nativity and color, the number and proportion of mothers of illegitimates returned for the years 1889-1891, and the average for ten years, 1881-1890.

Nativity and color of mothers.	1889.			1890.			1891.			Average for 10 years, 1881-1890.		
	Mothers having illegitimates.	Whole No. of mothers including those of illegitimates.	Per cent of mothers of illegitimates to all mothers.	Mothers having illegitimates.	Whole No. of mothers including those of illegitimates.	Per cent of mothers of illegitimates to all mothers.	Mothers having illegitimates.	Whole No. of mothers including those of illegitimates.	Per cent of mothers of illegitimates to all mothers.	Mothers having illegitimates.	Whole No. of mothers including those of illegitimates.	Per cent of mothers of illegitimates to all mothers.
Mothers of all colors and nativities.....	419	48,727	.9	450	51,517	.9	386	50,149	.8	360	42,771	.8
All native-born mothers.....	126	25,775	.5	145	27,469	.5	143	25,783	.6	189	23,406	.6
All foreign-born mothers.....	78	21,958	.3	76	22,834	.3	66	23,092	.3	75	18,429	.4
Mothers of unknown nativities.....	220	994	22.1	229	1,214	18.9	177	1,274	13.9	146	936	15.6
White.....	404	48,299	.8	417	50,992	.8	358	49,826	.7	334	42,355	.8
Black.....	7	201	3.5	17	324	5.3	13	173	7.5	8	172	4.7
Mulatto.....	4	65	6.2	8	79	3.8	1	34	2.6	4	92	4.3
Indian.....	2	109	1.8	8	107	7.5	11	87	12.6	6	116	5.1
Unknown.....	2	63	3.2	5	15	33.3	3	29	10.3	8	36	22.2
Black and mulatto....	11	266	4.1	20	403	5.0	14	207	6.8	12	264	4.4

Table 24 shows the distribution of illegitimate births through the year 1891.

TABLE 24.—Exhibiting, by sex, the number by months, and the nativity of parents of illegitimates returned for the year 1891.

Sex of illegitimates, 1891.	Year 1891.	Months of birth, 1891.												Nativity of parents.							
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Native.	Foreign.	Foreign father, native mother.	Foreign mother, native father.	Father unknown.		Both unknown.
																			Mother native.	Mother foreign.	
Total	389	30	31	18	22	26	27	45	53	32	38	31	32	4	44	18	9	2	92	47	177
Males	194	13	13	10	9	12	13	18	22	16	16	15	14	3	19	11	5	.....	47	21	71
Females	204	16	17	8	12	14	14	25	30	14	20	15	18	1	25	7	4	2	38	25	103
Unknown.....	11	1	1	1	1	1	1	2	1	2	2	1	1	1	.....	.....	.....	.....	7	1	8

Table 25 makes comparisons between the returns for the last fourteen years. The enumeration of illegitimates is liable to many errors, and the uncertain nature of the facts is shown by the large fluctuations in the numbers returned from year to year, and more forcibly by the sudden changes in the ratio of illegitimates to total births. A difference of from between 3 to 4 per 1,000 often occurs between adjacent years.

TABLE 25.—*Exhibiting the number and ratio of illegitimate births returned in fourteen years, 1878-1891.*

Years.	Children born out of wedlock.		Years.	Children born out of wedlock.	
	Number.	To every 1,000 births.		Number.	To every 1,000 births.
1878.....	202	5.7	1885.....	248	5.9
1879.....	292	8.6	1886.....	300	7.3
1880.....	245	12.0	1887.....	422	9.1
1881.....	382	11.0	1888.....	501	12.1
1882.....	301	8.1	1889.....	421	8.5
1883.....	311	7.6	1890.....	455	8.7
1884.....	193	4.8	1891.....	389	7.7
Average 14 years.....				389	8.4

The comparison of nativities for fourteen years made in Table 26 shows that while large variations occur between the total number of mothers from year to year, this variation seems to affect more largely the column containing the mothers of unknown nativity. The percentage of native-born mothers is constantly greater than that of foreign-born mothers, and the average for the period is nearly twice as great.

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TABLE 26.—*Showing the nativity of mothers of illegitimates returned for the fourteen years, 1878-1891.*

Years.	Totals.	Native.		Foreign.		Unknown.	
		Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
1878.....	202	114	56.4	34	16.8	54	26.7
1879.....	292	127	43.9	90	31.2	65	22.3
1880.....	425	148	34.8	78	17.2	204	48.0
1881.....	332	187	56.9	96	28.9	49	14.8
1882.....	301	145	48.2	77	25.6	79	26.3
1883.....	311	127	41.1	86	27.7	88	28.3
1884.....	198	103	52.0	69	34.8	21	10.9
1885.....	248	115	46.4	86	34.7	47	18.9
1886.....	300	142	47.3	45	15.0	113	37.7
1887.....	422	151	35.8	72	17.1	199	47.1
1888.....	591	149	25.2	72	12.2	370	62.6
1889.....	419	126	30.1	73	17.4	220	52.5
1890.....	450	148	32.9	73	16.2	229	50.9
1891.....	386	148	38.3	66	17.1	177	45.6
Average.....	352	139	39.5	72	20.5	140	39.9

Table 27 makes comparison of the returns of illegitimacy with the population by color, according to the last census. Nearly seven times as many illegitimates are returned from the colored population as from the white in proportion to the number of each.

TABLE 27.—*Exhibiting by sex and color the population of 1890, the number of illegitimates returned for the year 1891, and the rate per thousand of such children to inhabitants.*

Color, race and nativities.	Sex.	Population by U. S. census of 1890.	Total illegitimate births, 1891.	Rate per thousand of illegitimate births to population.	Per cent of each sex to total of both sexes.	Number of inhabitants to one illegitimate child of the same color.
All colors and nativities	Totals	2,093,889	289	.2	100.0	5,283
	Males	1,091,780	174	.2	44.9	6,275
	Females	1,002,109	204	.2	52.4	4,912
	Unknown		11		2.8	
White	Totals	2,072,984	361	.2	100.0	5,742
	Males	1,080,717	164	.2	45.4	6,589
	Females	992,167	190	.2	52.6	5,222
	Unknown		7		1.9	
Colored	Totals	21,006	28	1.3	100.0	840
	Males	11,083	10	.9	40.0	1,108
	Females	9,942	14	1.4	56.0	710
	Unknown		1		4.0	
Unknown color	Unknown		3		100.0	
Colored.	Black	Total	7,036	13	1.5	541
	Mulatto	Total	5,187	1	.1	8,187
	Indian	Total	5,624	11	1.9	511
	Asiatic	Total	156			

Table 28 shows that 19 townships, aggregating 3,313 inhabitants, reported that no births had occurred during the year 1891. Some of these more probably belong to the list of delinquent townships.

TABLE 28.—*Townships in which it was reported there were no births in 1891.*

County.	Township or ward, by U. S. census of 1890.	Population	County.	Township or ward, by U. S. census of 1890.	Population
Total		3,313		Reaver Lake	284
				Gondar	97
Alcona	Rant	177	Oshtemo	Hill	47
Alcona	Sandborn	304		Marquette	291
Arctic	McFar	240		Mills	65
	Turner	48		Shawnee	272
Benzie	Lake	170	Charlevoix	Charlevoix	149
Houghton	Laird	186		Genesee	65
Midland	Greendale	151	Rock	Rock	139
Montmorency	Briley	38		Richmond	76
			Washtenaw	Savage	339

DELINQUENT TOWNSHIPS.

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Table 29 gives a list of the townships, in one instance constituting an entire county, in which no enumeration was made by the supervisors according to their duty under the law. Iron county also failed in 1889 and 1890 to make a report. Fortunately the population is small and will not materially affect the State total.

TABLE 29.—Counties and townships from which no returns of births were made for 1891.

County.	Township or ward.	Population by U. S. census of 1890.	County.	Township or ward.	Population by U. S. census of 1890.
Total.....		23,151	Lake.....	{ Elk.....	569
				{ Glencoe.....	94
Baraga.....	Arvon.....	209	Mackinac.....	{ Cedar.....	586
	{ Detour.....	964		{ Newton.....	763
Chippewa.....	{ Trout Lake.....	112	Marquette.....	{ Humboldt.....	608
Clare.....	Arthur.....	168		{ Tilden.....	908
	{ Ball.....	95	Mason.....	Lincoln.....	171
Crawford.....	{ Blaine.....	51	Menominee.....	Myer.....	1,252
	{ South Branch.....	106		{ Bohemia.....	92
Gladwin.....	Buckeye.....	581	Ontonagon.....	Greenland.....	272
Gogebic.....	Watersmeet.....	606		Interior.....	559
	{ Burleigh.....	443		McMillan.....	597
Iosco.....	{ Thompeon.....	55	Otsego.....	Bagley.....	639
	{ Bates.....	594	Roecommon.....	Higgins.....	586
	Crystal Falls.....	1,176		{ Fremont.....	812
	Felch.....	414		James.....	655
Iron.....	Iron River.....	1,426	Saginaw.....	{ Richland.....	1,221
	Mastodon.....	111		Spaulding.....	516
	Stambaugh.....	711		Thomastown.....	1,200
Jackson.....	Springport.....	1,474	Wayne.....	Sumpter.....	1,523
Kalkaska.....	Glade.....	183			

PART III.—MARRIAGES IN MICHIGAN DURING THE YEAR 1891.

A larger number of marriages was registered for this year, than for any year preceding. The number was 19,231, and includes all of the marriages performed in 1891, of which returns were made up to and including the returns for the first quarter of 1892. The system regulating the registration of marriages may be considered the most satisfactory of that governing the collection of any class of vital statistics in this State. The returns are made quarterly, instead of being the result of an enumeration for the entire year, made some time after its close, as is the case in the registration of births and deaths. The information required is a necessary preliminary to the filling out of the license authorizing the solemnization of the marriage and is, with very few exceptions, fully and correctly obtained. The character of the record itself is one that commends itself to the public feeling which recognizes the necessity of a complete legal record of all marriages far more fully than it does the importance of preserving the facts relating to births or deaths. As a matter of fact, quite as many applications are made to the central registration office for facts regarding the deaths of pensioners and others as inquiries concerning marriage records, but in many cases it is impossible to supply the information needed.

The efficiency of the present system of returns is shown by the comparison of tables, showing the returns for each year, with those corrected to a later date. Thus in Table 30, the total numbers stated for each year, 1888-1890, and for each quarter of each year contain all the marriages returned up to the receipt of the quarter ending March 31, 1892. Table 31 shows the number of marriages originally printed in the reports for the same periods of time, before the delinquent returns were received. In three years the number for 1888 was increased by 64 marriages; the number for 1889 by only 17 in two years; and the number for 1890, by 81 marriages, nearly all of which were added from the returns for the first quarter of 1892.

Such addition has already been made in the case of the returns for 1891, and a continuance of this procedure will remove any necessity for the continuance of the tabular comparisons between "marriages corrected" and "marriages originally returned," made in the tables referred to, as the original statement of the number of marriages in each year will contain the great bulk of the number hitherto added in a later report.

Table 43 of the 1890 Report, exhibiting the number of delinquent marriages returned by counties, although a necessity when originally constituted and the number of such delinquent marriages was large, has become quite unnecessary and accordingly has been omitted.

The corrections by counties are shown in a foot-note to Table 30, and the comparisons to population may be seen in Exhibit E., Part I., and in Table 34.

The rate per 1,000 of persons married, based on estimated population of 1891, was 17.9, and compared directly to census of 1890, with no allowance made for increase of the year, was 18.3.

A view of the arrangement of the tables in which the statistics relating to marriages are presented and discussed is given in the following synopsis:

Synopsis of marriage tables.

Table.	Marriages in Michigan, 1891.
30	Marriages corrected according to latest returns by quarters. Comparison with 1888-90, and with the average for the decade 1881-1890.
31	Marriages as originally returned for 1888-1890, with the average 1881-1890.
32	Showing the months in order of number of marriages returned in each for 1888-1891; also the average for 1881-1890.
33	A detailed exhibit, by counties and by months, of marriages performed in 1891.
34	Comparison of persons married in 1891, by sex, color and nativity, with population in 1890.
35	The number and per cent of brides and bridegrooms of native and foreign birth.
36	Comparison for a period of twenty-one years, 1871-1891, of the per cents of marriages of different nativities.
36a	Comparison for a period of twenty-one years, 1871-1891, of the per cents of parent nativities of children born in Michigan.
<i>Relations of age to marriage.</i>	
37	The average ages, by nativities, of persons married in Michigan in 1891, and comparison with previous years.
38	Comparison of numbers of males and females married at different periods of age to total number married at those ages and to total number married at all ages.
39	Detailed statement for the State and counties of the number of marriages of each nativity and the number of persons married at different periods of age.
40	Groups of marriages by periods of age of brides and grooms, 1891.
41	Comparison for twenty-one years, 1871-1891, of the per cents of males married at each period of age.
42	Comparison for twenty-one years, 1871-1891, of the per cents of females married at each period of age.
43	Detailed statement, for the State and counties, of the number of persons of each nativity married at each period of age.

The numbers stated for the years and quarters in Table 30 will be seen to be a little larger than those in Table 31, on account of additional marriages which were returned after the first tabulation, as has been already explained. The average for the ten years, 1881-1890, is stated as 16,988 in Table 30, and as 16,956 in Table 32. The difference of 32 in the average of the decade is caused by the fact that it has been customary to carry on the corrections by quarters one year later than those by months. In the ten years for which the average was taken there were 323 marriages returned after the third year had elapsed, which were inserted in Table 30 but not in Table 32.

TABLE 30.—*Marriages by quarters of the year for each of the years 1888-1891, and the average for the years 1881-1890. Corrected for additional returns up to March 31, 1892.**

Totals and months with which quarters end.	1888.		1889.		1890.		1891.		Average for 10 years, 1881-1890.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Totals	17,297	100.0	18,317	100.0	18,658	100.0	19,231	100.0	16,988	100.0
March	8,702	21.4	4,184	22.9	3,815	20.4	4,129	21.5	3,694	21.7
June	4,070	23.5	4,262	23.3	4,448	23.8	4,537	23.6	3,913	23.0
September	4,054	23.4	4,290	23.4	4,489	24.1	4,511	23.5	4,104	24.2
December	5,464	31.6	5,578	30.4	5,904	31.6	6,053	31.5	5,232	31.1
Unknown	7	-----	3	-----	2	-----	1	-----	5	-----
Average†	4,323	25.0	4,579	25.0	4,665	25.0	4,806	25.0	4,247	25.0

* Since the last compilation one marriage for 1889 has been returned—from Newaygo county. For 1890 a total of 81 have been received, as follows: Washtenaw, 23; Bay, 22; Cass, 13; Alcona, 6; Baraga, 4; Newaygo, 3; Branch, Macomb, each 2; Midland, 1.

† Including marriages in unknown quarter of the year.

TABLE 31.—*Marriages, by quarters of the year, for each of the years 1888-1890, and the average for ten years, 1881-1890, as originally returned and published in the reports.*

Totals and months with which quarters end.	1888.		1889.		1890.		Average for 10 years, 1881-1890.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Totals	17,233	100.0	18,300	100.0	18,577	100.0	16,525	100.0
March	3,701	21.5	4,183	22.9	3,815	20.5	3,637	22.0
June	4,067	23.6	4,260	23.3	4,445	23.9	3,855	23.3
September	4,049	23.5	4,237	23.4	4,433	24.1	4,019	24.3
December	5,409	31.4	5,567	30.4	5,832	31.4	5,009	30.3
Unknown	7	-----	3	-----	2	-----	5	-----
Average*	4,306	25.0	4,575	25.0	4,644	25.0	4,131	25.0

* The number in unknown quarter of the year included.

MARRIAGES BY MONTHS.

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Table 30 may therefore be considered to be more accurate than the table by months and is used in obtaining the total numbers of marriages in each year compared in Part I. The fourth quarter of each year has always returned the largest number of marriages, and this holds true in 1891. In the order of months December holds first place for the first time in some years. June, contrary to what might have been expected, is low in the scale for the ten-year period although generally considered a favorite month for weddings. The number of June marriages would seem to be increasing in recent years.

TABLE 32.—*Marriages by months, in order of number, for the years 1889-1891, compared with the averages for the ten years 1881-1890. Corrected for additional returns up to March 31, 1892.**

Order of months.	1889.			1890.			1891.			Average for 10 years, 1881-1890.		
	Months.	Num-ber.	Per cent of total.	Months.	Num-ber.	Per cent of total.	Months.	Num-ber.	Per cent of total.	Months.	Num-ber.	Per cent of total.
	Year....	18,317	100.0	Year....	18,658	100.0	Year..	19,231	100.0	Year..	16,956	100.0
1	Oct.	1,906	10.4	Nov.	2,067	11.0	Dec.	2,085	10.8	Nov.	1,793	10.6
2	Nov.	1,892	10.3	Dec.	1,993	10.7	Nov.	1,984	10.3	Oct.	1,740	10.3
3	Dec.	1,778	9.7	Oct.	1,854	9.9	Oct.	1,984	10.3	Dec.	1,736	10.2
4	Sept.	1,652	9.0	Sept.	1,739	9.3	Sept.	1,748	9.1	Sept.	1,556	9.2
5	May	1,459	8.0	April	1,611	8.6	April	1,617	8.4	April	1,358	8.0
6	Jan.	1,439	7.9	June	1,482	7.9	June	1,501	7.8	July	1,330	7.8
7	March ..	1,415	7.7	July	1,486	7.7	Jan.	1,466	7.6	May	1,298	7.6
8	June	1,404	7.7	May	1,355	7.3	May	1,419	7.4	Jan.	1,272	7.5
9	April	1,398	7.6	Aug.	1,314	7.0	Aug.	1,333	7.2	Mar.	1,258	7.4
10	July	1,382	7.5	Jan.	1,314	7.0	July	1,380	7.2	June	1,255	7.4
11	Feb.	1,381	7.3	Feb.	1,352	6.7	Mar.	1,337	7.0	Aug.	1,211	7.1
12	Aug.	1,256	6.9	March ..	1,349	6.7	Feb.	1,326	6.9	Feb.	1,149	6.8
	Unk.	3	-----	Unk.	2	-----	Unk.	1	-----	Unk.	5	-----
	Av.† ..	1,526	8.3	Av.† ..	1,555	8.3	Av.† ..	1,608	8.3	Av.† ..	1,413	8.2

* See counties from which additional marriages have been added in note to Table 30.

† Average includes unknown month.

The detailed exhibit by counties and months of marriages returned in 1891 is seen in Table 33. To this table is appended as a foot-note a statement of the facts in regard to color of marriages which has formerly been presented in a special table. The total number of colored marriages is so small, however, that this table consisted mainly of blank spaces, and it is believed that the data can be better examined in the condensed form here given. The number of marriages between persons of different race or color is exceedingly small, being lower than in any previous year. Indeed the number appeared so low in comparison with previous years that a special search was made in the returns of such counties as generally report numerous Indian and black marriages, but with the result only of confirming the accuracy of the accompanying statement.

TABLE 33.—*Distinguishing, by counties and by months, the number of marriages returned for the year 1891.*

State and counties.	Number of marriages, 1891.	Number of marriages, by months, 1891.												
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
State	19,281	1,466	1,326	1,337	1,617	1,419	1,501	1,380	1,383	1,748	1,984	1,984	2,085	
Aloona.....	40	2	2	2	3	4	2	4	6	2	7	3	3	
Alger.....	8			1	1	1	4	1						
Allegan.....	351	17	23	30	25	30	21	30	20	30	41	38	46	
Alpena.....	148	10	1	9	14	8	17	19	9	12	12	26	11	
Antrim.....	104	7	4	6	7	9	9	3	7	11	13	14	14	
Arenac.....	46	4	3	2	2	4	4	6	2	5	5	3	6	
Baraga.....	86	3	1	2	1	2	2	5	4	2	6	3	5	
Barry.....	212	16	26	22	13	11	14	10	18	20	25	10	27	
Bay.....	508	32	31	31	56	42	45	38	47	48	47	51	40	
Benzie.....	60	6	4	3	8	2	4	6	3	4	7	6	7	
Berrien.....	425	32	21	33	26	22	38	35	34	45	53	42	44	
Branch.....	245	16	14	25	16	10	22	10	12	22	34	31	33	
Calhoun.....	414	24	22	36	35	23	34	29	26	42	39	47	57	
Case.....	210	17	6	15	13	9	11	14	22	17	18	22	46	
Charlevoix.....	84	8	5	7	8	5	9	6	5	9	7	7	8	
Cheboygan.....	89	11	3	6	5	8	9	9	6	11	7	7	7	
Chippewa.....	117	14	9	6	7	7	11	7	13	11	13	10	9	
Clare.....	71	6	4	7	5	5	8	5	6	2	9	6	8	
Clinton.....	246	23	20	20	27	17	16	14	16	17	20	31	25	
Crawford.....	24	4			2	2		1	1	3	3	2	6	
Delta.....	159	8	8	8	16	13	16	10	20	19	16	14	11	
Dickinson.....	41										14	16	11	
Eaton.....	326	19	28	24	27	18	13	14	20	29	38	43	53	
Emmet.....	90	8	4	5	2	8	3	11	7	9	12	13	8	
Genesee.....	355	31	39	26	26	29	19	18	22	40	22	36	47	
Gladwin.....	46	5	3	6	3	5	3	3	4	2	2	7	3	
Gogebic.....	164	18	9	9	13	15	13	17	15	11	16	18	10	
Gd. Traverse.....	149	12	11	7	20	23	9	11	7	9	16	10	14	
Gratiot.....	275	24	25	26	23	19	14	25	23	26	17	24	29	
Hillsdale.....	270	20	24	30	13	12	16	15	20	33	33	20	34	

MARRIAGES BY COUNTIES AND MONTHS.

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TABLE 33.—CONTINUED.—*Marriages by counties, by months.*

Counties.	Number of marriages, 1891.	Number of marriages, by months, 1891.												Unknown.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Houghton	419	40	21	13	26	38	45	29	51	36	44	53	23	....
Huron	261	37	17	23	18	18	23	14	13	20	25	25	28	....
Ingham	390	29	33	30	35	29	21	22	29	33	39	48	42	....
Ionia	311	24	19	22	26	23	16	23	21	27	37	34	39	....
Iosco	108	6	4	6	8	9	11	12	8	7	10	14	13	....
Iron	37	4	3	4	3	2	1	5	2	6	1	3	3	....
Isabella	180	17	9	11	13	11	11	19	18	22	16	15	18	....
Iale Royal .....														....
Jackson	391	37	33	30	26	26	27	25	30	40	33	35	49	....
Kalamazoo	402	24	30	35	41	26	28	26	19	37	45	40	51	....
Kalkaska	56	2	2	7	5	2	4	2	9	7	8	1	7	....
Kent	1,287	89	82	79	92	116	98	124	87	131	117	133	139	....
Keweenaw	22	2	4		1	2		4	2		4	1	2	....
Lake	40	1	6	3	4	4	4	2	3	5	3	1	4	....
Lapeer	251	27	20	24	20	15	17	15	16	22	25	19	31	....
Leelanau	61	4	2	2	10	8	7	2	5	3	7	8	3	....
Lenawee	392	42	39	38	34	24	29	18	20	29	41	42	36	....
Livingston	152	12	6	25	11	7	2	8	7	17	18	21	18	....
Luce	30	1	3	3	5	2	2	2	3	1	2	5	1	....
Mackinac	71	4	2	5	5	9	9	8	4	5	7	8	5	....
Macomb	255	23	25	13	26	18	19	13	13	20	25	30	30	....
Manistee	211	13	20	22	16	16	15	17	17	17	19	21	18	....
Manitou	1	1												....
Marquette	468	43	28	24	21	41	40	38	38	44	39	65	47	....
Mason	131	15	9	11	13	4	10	18	11	10	12	9	9	....
Mecosta	181	8	14	16	24	13	12	15	15	1	29	11	23	....
Menominee	233	19	16	8	29	27	29	27	25	12	20	10	10	1
Midland	104	5	9	12	12	6	5	9	7	10	7	8	14	....
Missaukee	61	4	8	4	4	1	6	6	6	10	5	3	4	....
Monroe	308	29	23	19	25	17	18	27	16	23	40	38	33	....
Montcalm	299	21	17	31	30	19	28	25	19	23	25	20	41	....
Montmorency	6		1				2	1	1	1				....
Muskegon	382	22	21	20	24	37	36	34	26	41	35	38	48	....
Newaygo	169	6	16	13	13	14	19	18	14	11	15	14	16	....
Oakland	288	10	27	27	14	25	24	17	13	17	30	32	52	....
Oscoda	114	6	3	6	9	6	9	10	8	9	9	19	20	....

TABLE 33.—CONCLUDED.—*Marriages, by counties, by months.*

Counties.	Number of marriages, 1891.	Number of marriages, by months, 1891.												
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
Ogemaw.....	46	2	4	2	9	5	3	3	2	5	3	3	5	---
Ontonagon.....	33	2	2	---	5	---	7	---	2	5	2	5	3	---
Oscoda.....	135	9	10	13	16	14	5	7	5	13	15	7	21	---
Oscoda.....	12	---	---	1	1	2	---	---	2	1	3	2	---	---
Otsego.....	36	3	2	2	6	3	1	2	5	1	2	5	4	---
Ottawa.....	245	17	14	19	16	20	27	16	17	21	26	26	26	---
Presque Isle.....	30	3	2	2	5	---	4	2	---	2	1	7	2	---
Roscommon.....	16	---	---	1	3	1	4	2	---	1	2	2	---	---
Saginaw.....	691	48	49	42	65	62	63	42	40	68	74	79	59	---
Sauk.....	220	23	17	17	15	8	14	17	9	16	28	23	33	---
Schoolcraft.....	73	3	1	5	7	7	5	9	10	6	10	6	4	---
Shiawassee.....	307	13	17	26	20	20	16	18	23	33	42	40	39	---
St. Clair.....	468	46	35	30	51	36	35	23	40	53	42	46	61	---
St. Joseph.....	229	14	17	25	16	11	13	11	15	16	30	26	35	---
Tuscola.....	252	15	18	19	21	18	18	21	19	28	24	19	32	---
Van Buren.....	273	22	23	14	24	17	20	11	26	24	25	33	34	---
Washtenaw.....	355	32	15	23	40	23	25	18	26	33	31	42	47	---
Wayne.....	2,285	178	170	103	227	194	221	156	160	222	267	222	165	---
Wexford.....	120	12	8	3	10	10	7	11	11	12	13	7	16	---

NOTE TO TABLE 33.

Of the 19,321 marriages in 1891, 19,044, or 99.03 per cent., were between persons returned as white. There were 69 marriages of blacks, 61 of mulattoes, and 54 of Indians. In 3 marriages the color was returned as "unknown." There were only 7 reported between persons of different color or race. The distribution of these marriages of colors other than white through the State is given below:

BLACK MARRIAGES.—Total for State, 69. By counties—17 in Wayne, 13 in Washtenaw, 9 in Kent, 5 in Jackson, 4 in Berrien, Genesee, 3 in Bay, 2 in Calhoun, Ingham, Lenawee, St. Clair, Van Buren (including one couple, male black, female mulatto), 1 in Allegan, Kalamazoo, Muskegon, Saginaw.

MULATTO MARRIAGES.—Total for State, 61. By counties—30 in Cass, Wayne, 4 in Kent, Van Buren (including 1 couple, male mulatto, female white), 3 in Kalamazoo, 1 in Benzie, Berrien (including 1 couple, male mulatto, female white), Calhoun, Emmet, Gratiot, Ingham, Jackson, Mecosta, Oakland, Shiawassee.

INDIAN MARRIAGES.—Total for State, 54. By counties—10 in Mackinac (including 1 couple, male Indian, female white), 9 in Emmet, 7 in Delta, 6 in Chippewa (including 2 couples, males Indian, females white), Mason, 3 in Antrim, 2 in Baraga, Isabella, 1 in Alcona, Bay, Cass, Iosco, Leelanau, Newaygo, (including 1 couple, male Indian, female white), Oceana, Otsego, Ottawa.

Color or race unknown.—Total for State, 3. By counties—1 in Houghton, Kent, Midland.

From Table 34 it would appear that a decidedly larger proportion of females than males was married in the year, reference being made to the population of each sex as stated by the census of 1890. This statement holds true concerning females of all classes, white and colored, native and foreign-born. An interesting comparison may be made between the proportion of persons married as shown in this table and the proportion of parents shown in Table 8 (Part II.) with reference to nativity. While over two-thirds of the entire number of persons married are native-born, the number of children born of parents both foreign practically equals the number born of native parents. The same is true if comparison be made of children whose parents are one or both native or one or both foreign.

TABLE 34.—*Comparison of persons married in 1891, by sex, color and nativity, with population in 1890.*

Color, race and nativities.	Sex.	Population by U. S. census of 1890.	Number of marriages, 1891.	Persons married, 1891.		Rate per thousand of persons married to population of 1890, by sex.	Number of persons who married those of another color.	
				Number.	Per cent of total.			
All colors and nativities	Totals	2,093,889	19,231	38,462	100.0	18.8	14	
	Males	1,091,780		19,231	100.0	17.5	7	
	Females	1,002,109		19,231	100.0	19.2	7	
White	Totals	2,072,884	19,044	38,094	99.0	18.8	6	
	Males	1,080,717		19,044	99.0	17.6		
	Females	992,167		19,050	99.0	19.2	6	
Colored	Totals	21,005	184	362	1.0	17.2	8	
	Males	11,063		184	1.0	16.6	7	
	Females	9,942		178	1.0	17.9	1	
Color not stated	Totals		3	6				
Colored.	Black	Totals	7,086	69	187	.4	19.5	1
	Mulatto	Totals	8,187	61	119	.3	14.5	3
	Indian	Totals	5,624	54	104	.3	18.5	4
	Asiatic	Totals	158					
Native-born	Totals	1,550,009		25,947	67.5	16.6		
	Males	790,708		12,611	65.6	15.9		
	Females	759,306		13,336	69.3	17.6		
Foreign-born	Totals	543,880		11,993	31.2	22.1		
	Males	301,077		6,603	34.3	21.9		
	Females	242,803		5,390	28.0	22.2		
Unknown nativity	Totals			522	1.3			

The same facts in regard to nativity of brides and bridegrooms are shown in Table 35, which also, by its cross arrangement, shows the number of each sex and nativity that married persons of the other sex and the same or different nativities.

TABLE 35.—*By nativity, the number and per cent of brides and bridegrooms returned for the year 1891.*

Bridegrooms and brides—nativity specified.	Brides, 1891.			Bridegrooms, 1891.	
	Native-born.	Foreign-born.	Unknown.	Total of each nativity and of all natives.	Per cent of each nativity.
Bridegrooms ... { Native-born.....	10,700	1,500	402	12,611	65.6
{ Foreign-born.....	2,620	3,885	98	6,603	34.3
{ Unknown.....	7	5	5	17	0.1
Brides ... { Whole No. of each nativity and total	13,336	5,390	505	19,231	.....
{ Per cent of each nativity and total.....	69.3	28.0	2.6	.....	100.0

Table 36 shows the proportions, stated as per cents of the total number in each year, of the native-born and foreign-born elements of marriages for a period of twenty-one years. Five-year averages enable the general tendencies of different portions of this time to be readily compared. It will be seen that the proportion of marriages in which both bride and groom are natives has decreased through the series of years compared, while that of foreign-born marriages has risen. The most noteworthy feature in the latter series is the small five-year average for the years 1876-1880. The total marriage rate, as shown in Exhibit E., Part L., was low for those years apparently from an absolute falling off in the number of foreign marriages.

NATIVITY OF MARRIAGES.

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TABLE 36.—*Per cents of marriages, by nativity, in Michigan, for twenty-one years, 1871-1891, and averages for the quinquennial periods, 1871-75, 1876-80, 1881-85, 1886-90.*

Years and periods averaged.	Nativity of marriages.				
	Both native-born.	Both foreign-born.	Native groom and foreign bride.	Foreign groom and native bride.	One or both unknown.
1871.....	58.9	19.1	6.3	13.1	3.5
1872.....	60.1	18.1	7.0	11.9	3.0
1873.....	57.9	20.7	6.7	12.5	2.2
1874.....	59.9	18.3	7.4	12.2	2.3
1875.....	61.6	16.1	7.4	12.9	2.1
Average, 1871-1875.....	59.7	18.5	7.0	12.3	2.6
1876.....	62.4	15.0	7.0	13.3	2.3
1877.....	63.3	14.3	7.2	13.1	2.1
1878.....	63.8	12.7	7.7	13.5	2.3
1879.....	64.2	12.2	7.4	13.6	2.1
1880.....	62.2	15.2	7.5	13.0	2.1
Average, 1876-1880.....	63.2	14.0	7.4	13.3	2.2
1881.....	59.3	18.0	8.2	12.8	1.8
1882.....	58.2	19.6	8.7	12.5	1.1
1883.....	57.2	20.6	8.7	12.3	1.3
1884.....	57.3	20.3	9.0	12.1	1.3
1885.....	59.1	18.7	8.9	12.1	1.2
Average, 1881-1885.....	58.2	19.4	8.7	12.4	1.3
1886.....	58.5	18.7	8.8	12.8	1.2
1887.....	56.6	20.2	8.5	13.1	1.6
1888.....	55.0	21.5	7.8	13.5	2.3
1889.....	55.7	20.4	7.8	13.5	2.5
1890.....	56.2	19.9	7.6	13.4	2.3
Average, 1886-1890.....	56.4	20.1	8.1	13.3	2.0
1891.....	55.7	20.2	7.8	13.6	2.7

For the purpose of comparison with Table 36, Table 36a, which is properly included in Part II., has been constructed and appears at this place. It exhibits the parent nativity of children born in Michigan for the same years covered by Table 36, but shows that the proportion of children born is quite different from the proportion of marriages of each nativity. A general correspondence may be traced between the two tables in the decrease of the per cents of native marriages and births and the increase of the per cents of foreign marriages and births.

VITAL STATISTICS OF MICHIGAN, 1891.

TABLE 36 a.—*Per cents of parents of children born in Michigan, by nativity, for twenty-one years, 1871-1891, and averages for the quinquennial periods, 1871-75, 1876-80, 1881-85, 1886-90.*

Years and periods averaged.	Nativity of parents.				
	Both native-born.	Both foreign-born.	Native father and foreign mother.	Foreign father and native mother.	One or both unknown.
1871.....	43.8	33.6	4.7	8.1	9.8
1872.....	46.1	34.7	4.9	9.3	5.0
1873.....	46.8	34.5	5.6	9.8	3.3
1874.....	42.8	38.8	5.4	10.1	7.9
1875.....	44.5	34.8	5.4	10.2	5.1
Average, 1871-1875	44.8	34.3	5.2	9.5	6.2
1876.....	45.4	34.8	5.5	10.5	3.8
1877.....	45.7	34.6	5.8	10.9	3.0
1878.....	46.4	34.1	5.6	11.0	2.9
1879.....	46.5	38.3	6.0	11.6	2.6
1880.....	46.1	33.9	5.8	11.2	3.0
Average, 1876-1880	46.0	34.1	5.7	11.0	3.1
1881.....	45.8	32.3	6.0	11.7	3.2
1882.....	48.7	35.6	6.0	11.7	3.0
1883.....	48.6	36.1	6.2	11.2	2.9
1884.....	48.1	36.4	6.5	11.4	2.6
1885.....	42.3	37.0	6.5	11.6	2.6
Average, 1881-1885	48.7	35.5	6.2	11.5	2.9
1886.....	42.9	37.8	6.2	10.8	2.5
1887.....	43.0	36.9	6.5	10.9	2.7
1888.....	44.0	36.3	6.1	10.5	3.1
1889.....	41.8	39.0	6.0	10.7	2.6
1890.....	41.8	38.4	6.0	10.8	3.0
Average, 1886-1890	42.7	37.6	6.2	10.7	2.8
1891.....	40.2	39.8	6.1	10.8	3.1

AGES OF PERSONS MARRIED.

The average ages for each year given in Table 37 are obtained by multiplying the number of persons of each sex and nativity who married at each age into the age of marriage and dividing the sums of these products by the respective totals for each nativity. Such figures obtained for 1891 correspond quite closely to those given for the years 1888-1890, and to the ten-year average. Males of native birth marry about a year younger on the average than those of foreign birth, and native females marry nearly two years younger than foreign.

TABLE 37.—*The average ages of persons married in Michigan during the year 1891, by nativity, compared with the corresponding figures for 1888-1890, and with the mean of the averages for the ten years 1881-1890.*

Nativity of persons married.	1888.		1889.		1890.		1891.		Mean of the average ages for 10 years, 1881-90.	
	Males.	Fe-males.	Males.	Fe-males.	Males.	Fe-males.	Males.	Fe-males.	Males.	Fe-males.
All nativities.....	29.2	24.4	28.2	23.5	28.9	24.3	28.5	23.6	28.4	23.6
Native	28.1	23.0	27.9	22.9	28.1	22.8	28.0	23.0	27.9	22.9
Foreign	29.3	24.8	29.0	24.5	29.3	24.6	29.3	24.7	29.3	24.5
Unknown	30.3	25.5	26.3	25.8	27.0	25.6	29.3	27.3	29.3	24.5

Table 38 compares the number of males and females married at different periods of age, and at certain special ages of interest, with the total numbers married at all ages. Two youths were married below the legal age, eighteen years, and ten girls were married under sixteen. One of these was returned as only thirteen years old at the date of marriage.

TABLE 38.—*Exhibiting, by sex, and by periods of age, the number and per ce persons married in Michigan during the year 1891.*

Ages in years and periods.	Marriages, 1891.						
	Total number of persons married, 1891.	Males.			Females.		
		Number married.	Per cent of total married.	Per cent of persons married at corresponding ages.	Number married.	Per cent of total married.	Per cent of persons married at corresponding ages.
All ages.....	28,462	19,231	100.0	50.0	19,231	100.0	
13.....	1				1		
15.....	9				9		
16.....	829	1		0.1	828	4.3	
17.....	1,178	1		0.1	1,177	6.1	
18.....	2,091	85	0.4	4.1	2,006	10.4	
19.....	2,171	227	1.2	10.9	1,934	10.1	
20.....	2,665	646	3.4	24.2	2,019	10.4	
21 to 25.....	12,851	6,848	35.6	53.2	6,008	31.2	
25 to 30.....	8,639	6,015	31.3	69.6	2,624	13.6	
30 to 35.....	3,400	2,380	12.4	70.0	1,020	5.3	
35 to 40.....	1,607	1,060	5.5	66.0	547	2.8	
40 to 45.....	982	616	3.2	62.7	366	1.9	
45 to 50.....	685	451	2.3	64.9	244	1.3	
50 to 55.....	499	312	1.6	62.5	187	1.0	
55 to 60.....	347	231	1.2	66.6	116	0.6	
60 to 65.....	217	140	0.7	64.5	77	0.4	
65 to 70.....	154	120	0.6	77.9	34	0.2	
70 to 75.....	74	61	0.3	82.4	13	0.1	
75 to 80.....	22	18	0.1	81.8	4		
80 and over.....	8	8		100.0			
Unknown ages.....	23	6		26.1	17	0.1	
Under 15.....	1				1		
15 to 20.....	6,278	324	1.7	5.2	5,954	31.0	
20 to 25.....	15,516	7,489	38.9	48.3	8,027	41.7	

Table 39 is really a union of two distinct tabular statements. The portion on the left of the central column gives a detailed exhibit for the State and counties of the number of *marriages* of each nativity. The remainder of the table states the number of *persons married*, by sex, at each period of age. Over 75 per cent of the total number of persons married were between the ages of 20 and 25.

TYPE AND PERIODS OF AGE.

[illegible]

TABLE 30.—CONTINUED.—*Marriages by counties, nativity and periods of age.*

Counties.	Number of marriages, 1891.	Number of marriages, by nativity, 1891.						Sex.	Number of persons married, by groups of ages, 1891.															
		Both native-born.	Foreign-born males.	Foreign-born females.	Foreign-born females.		Both unknown.		Under 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.		
					Native.	Foreign-born.																	Males unknown.	
																							Female.	Male.
Houghton.....	419	72	69	17			{ Males..... Females.....	5 107	156 219	167 59	59 15	19 11	9 4	2 1	1 1							2		
Huron.....	261	54	73	41	2		{ Males..... Females.....	1 103	111 104	86 28	28 7	10 3	12 8	6 3	3 1	2 1	1		1					
Ingham.....	390	317	30	16	3	3	{ Males..... Females.....	7 127	175 167	108 47	36 14	19 8	15 13	8 7	3 1	8 2	8 3	1 1	1					
Ionia.....	311	266	6	23	14	2	{ Males..... Females.....	8 108	125 125	95 35	29 20	15 8	11 8	10 2	5 5	4 8	2 1	1	1					
Iosco.....	108	82	26	21	16	3	{ Males..... Females.....	42 49	40 39	20 12	20 6	2 6	2 1	3 2	1 1									
Iron.....	37	4	28	4	1		{ Males..... Females.....	10 19	15 19	12 4	6 1	2 1	3 3	2 3	1 1									
Isabella.....	180	108	23	22	18	7	{ Males..... Females.....	3 64	66 63	44 20	26 7	10 6	8 7	6 3	4 7	2 2	1	1						
Jackson.....	361	296	17	43	20	15	{ Males..... Females.....	10 105	146 158	106 67	53 23	23 15	28 13	6 1	7 4	5 4	1 1	5 1	1					
Kalamazoo.....	402	291	37	42	26	8	{ Males..... Females.....	5 81	144 184	111 63	49 25	27 17	24 18	12 3	13 2	6 4	4 3	3 1	1					

Table 40 gives an interesting showing of the numbers of marriages at different periods of age of the contracting parties. Beginning with the left upper corner of the body of the table and reading down the vertical columns we see that 260 females under 20 years of age married males under 20; 3,540 females under 20 married males aged from 20 to 25 years, etc. The total number of females married under 20 was 5,955, which number was 31.0 per cent of all females married. The corresponding facts in regard to males of each age may be noted by reading the horizontal lines of the table. The largest number of marriages was between males aged 20 to 25, and females of the same period of age; the next in order is the group between males aged 20-25 and females under 20 years. From these groups the numbers become less, gradually for males, more abruptly for females, with advancing years, until a scattered few in extreme old age stand out only as curiosities of matrimony.

TABLE 40.—*Exhibiting the number of each sex, at each period of age, married during the year 1891, and the per cent of brides and bridegrooms at each period of age to total of all ages.*

Ages of males, 1891.	Ages of females, 1891.														Total males.	Per cent of grooms at each age.
	Under 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.	
Under 20.....	260	56	7	1	—	—	—	—	—	—	—	—	—	—	324	1.7
20 to 25.....	3,540	3,564	328	43	8	2	—	—	—	—	—	—	—	—	4	7,489 38.9
25 to 30.....	1,685	3,026	1,152	153	31	11	1	1	—	—	1	—	—	—	4	6,015 31.3
30 to 35.....	370	912	659	322	67	15	2	1	—	—	—	—	—	—	2	2,380 12.4
35 to 40.....	94	291	286	190	144	41	13	1	—	—	—	—	—	—	—	1,060 5.5
40 to 45.....	28	86	112	143	113	94	32	7	1	—	—	—	—	—	—	616 3.2
45 to 50.....	19	43	49	44	97	73	47	17	7	3	1	—	—	—	1	451 2.3
50 to 55.....	4	9	23	44	52	58	49	51	17	4	—	1	—	—	—	312 1.6
55 to 60.....	1	5	3	17	26	41	41	49	34	8	4	—	1	—	1	231 1.2
60 to 65.....	3	3	3	4	7	13	34	36	16	16	4	1	—	—	—	140 .7
65 to 70.....	1	1	1	5	1	12	16	18	28	23	13	1	—	—	—	120 .6
70 to 75.....	—	—	1	4	1	5	8	2	10	21	7	2	—	—	—	61 .3
75 to 80.....	—	—	—	—	—	1	1	2	3	2	3	5	1	—	—	13 .1
80 and over.....	—	—	—	—	—	—	—	2	—	—	1	3	2	—	—	8
Unknown.....	—	1	—	—	—	—	—	—	—	—	—	—	—	—	5	6
Total females...	5,955	8,027	2,624	1,020	547	366	244	187	116	77	34	13	4	—	17	19,231
Per cent of brides at each age...	31.0	41.7	13.6	5.3	2.8	1.9	1.3	1.0	.6	.4	.2	.1	—	—	.1	100.0

While many facts of interest may be noted in the study of this table as it appears for a single year, the general course of marriages in the State, so far as the age relations of the contracting parties are concerned, is better studied in Tables 41 and 42.

Table 41 enables some interesting conclusions to be drawn in regard to the proportions of males married at various periods of age in different years. It will be seen that the per cent of those married under 20 years of age has steadily fallen during the series of years compared. So, also, and in more marked degree, has the per cent of males aged 20 to 25. To off-set this loss in the ratio of males married under 25, the per cent of each of the five year groups from 25 to 35 have risen. Perfectly analogous changes will be noticed in Table 42, which compares the ages of females married. Here the ages from 20 to 35 seem to be increasing their proportions at the expense chiefly of the number married under 20.

TABLE 41. *Per cents of males married at each period of age for twenty-one years, 1871-1891, with quinquennial averages for 1871-75, 1876-80, 1881-85, 1886-90.*

Years and periods averaged.	Ages of males, by periods of years, married 1871-1891.													
	Under 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	Over 80. Unknown.
1871	2.9	40.4	30.1	10.5	5.6	3.2	2.2	1.6	1.1	.8	.5	.3	.1	.7
1872	2.5	42.3	29.0	10.1	5.1	3.6	2.2	2.0	1.0	.7	.4	.3	.1	.7
1873	2.4	41.8	29.2	10.9	5.8	3.0	2.2	1.6	.9	.9	.5	.3	.1	.4
1874	2.5	40.7	29.4	11.0	5.5	3.0	2.4	1.8	1.3	.9	.5	.3	.1	.7
1875	2.5	40.9	29.9	10.5	5.4	3.5	2.5	1.5	1.1	.9	.5	.3	.1	.4
Average, 1871-75	2.6	41.2	29.5	10.6	5.5	3.3	2.3	1.7	1.0	.8	.5	.3	.1	.6
1876	2.8	40.6	29.6	10.3	5.9	3.1	2.4	1.8	1.2	.8	.6	.3	.1	.4
1877	2.4	40.0	30.2	11.2	5.3	3.4	2.4	1.7	1.2	.9	.6	.3	.1	.4
1878	2.9	41.3	29.6	10.6	5.8	3.1	1.9	1.5	1.0	.9	.6	.3	.1	.4
1879	2.4	41.1	29.5	11.4	5.5	3.1	2.3	1.5	.9	.7	.5	.3	.1	.7
1880	2.5	41.1	30.1	10.7	5.6	3.1	2.0	1.5	1.2	.8	.4	.4	.1	.4
Average, 1876-80	2.6	40.8	29.8	10.8	5.6	3.2	2.2	1.6	1.1	.8	.5	.3	.1	.5
1881	2.3	40.5	30.0	11.8	5.4	3.1	2.1	1.6	.9	.8	.5	.3	.1	.5
1882	2.3	40.0	30.1	11.5	5.9	3.2	2.2	1.6	1.0	.9	.4	.3	.1	.4
1883	2.1	39.8	31.0	11.1	5.8	3.1	2.1	1.6	1.1	.9	.6	.3	.1	.4
1884	2.4	38.9	30.9	11.5	5.6	3.3	2.1	1.5	1.1	1.0	.6	.5	.1	.5
1885	2.7	38.3	31.4	11.2	5.9	3.4	2.4	1.6	1.0	.8	.6	.2	.1	.4
Average, 1881-85	2.4	39.5	30.7	11.4	5.7	3.2	2.2	1.6	1.0	.9	.5	.3	.1	.4
1886	2.7	37.8	32.3	11.8	5.5	3.0	2.2	1.7	1.1	.8	.6	.3	.1	.2
1887	2.3	36.5	32.5	12.3	6.0	3.4	2.1	1.7	1.0	.9	.7	.4	.1	.1
1888	1.8	37.4	33.0	12.2	5.6	2.1	3.4	1.5	1.1	.8	.6	.4	.2	---
1889	1.9	38.0	32.8	12.2	5.5	3.2	2.1	1.3	1.0	.8	.6	.3	.1	---
1890	1.6	38.6	31.6	12.7	5.9	3.1	2.1	1.5	1.1	.8	.5	.3	.1	.1
Average, 1886-90	2.1	37.7	32.4	12.2	5.7	3.0	2.4	1.5	1.1	.8	.6	.3	.1	.1
1891	1.7	38.9	31.3	12.4	5.5	3.2	2.3	1.6	1.2	.7	.6	.3	.1	---

TABLE 42.—*Per cents of females married at each period of age for twenty-one years, 1871-1891, with quinquennial averages for 1871-75, 1876-80, 1881-85, 1886-90.*

Years and periods averaged.	Ages of females, by periods of years, married 1871-1891.														
	Under 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	Over 80.	Unknown.
1871.....	35.5	37.2	13.3	4.8	3.0	2.2	1.2	.7	.4	.3	.2	.....	.....	.....	1.3
1872.....	37.1	36.8	12.6	4.9	2.9	1.8	1.3	.8	.4	.3	.2	.....	.....	.....	.9
1873.....	36.3	36.9	13.0	5.5	2.9	2.0	1.0	.8	.4	.4	.2	.1	.....	.....	.6
1874.....	37.5	35.4	12.5	4.9	3.1	2.0	1.4	.9	.5	.4	.2	.....	.....	.....	1.1
1875.....	37.9	36.1	11.9	4.8	3.2	1.9	1.4	.8	.5	.3	.2	.....	.....	.....	.9
Average, 1871-75.....	36.9	36.5	12.7	5.0	3.0	2.0	1.3	.8	.5	.3	.2	.....	.....	.....	.9
1876.....	38.9	35.7	11.8	4.9	3.1	2.0	1.4	.8	.6	.4	.1	.1	.....	.....	.7
1877.....	38.2	36.3	11.7	4.9	3.2	1.8	1.4	.7	.6	.3	.2	.....	.....	.....	.7
1878.....	37.7	37.7	11.4	4.7	3.0	1.8	1.2	.8	.5	.3	.2	.....	.....	.....	.7
1879.....	36.5	38.2	12.1	4.4	3.2	1.8	1.2	.7	.5	.4	.1	.1	.....	.....	.9
1880.....	35.5	39.0	12.1	4.7	3.1	2.0	1.3	.8	.4	.3	.2	.....	.....	.....	.7
Average, 1876-80.....	37.4	37.4	11.7	4.7	3.1	1.9	1.3	.8	.5	.3	.2	.....	.....	.....	.7
1881.....	38.3	40.7	12.7	4.7	2.9	1.8	1.4	.7	.5	.4	.1	.....	.....	.....	.7
1882.....	32.9	38.9	14.0	5.5	3.3	1.9	1.2	.9	.4	.3	.1	.....	.....	.....	.6
1883.....	33.8	39.1	13.4	4.9	3.1	1.9	1.4	.5	.6	.3	.2	.1	.....	.....	.5
1884.....	34.0	38.4	13.8	4.7	3.0	2.1	1.2	.8	.6	.4	.2	.1	.....	.....	.8
1885.....	35.2	36.6	14.4	4.9	3.1	2.0	1.2	.9	.5	.3	.2	.1	.....	.....	.6
Average, 1881-85.....	33.8	38.7	13.7	4.9	3.1	1.9	1.3	.8	.5	.3	.2	.1	.....	.....	.6
1886.....	35.0	37.5	13.8	5.2	3.0	1.7	1.3	.9	.5	.4	.1	.1	.....	.....	.5
1887.....	33.3	38.1	14.6	5.3	2.9	2.1	1.3	.9	.6	.4	.2	.1	.....	.....	.3
1888.....	31.8	40.3	14.4	4.9	2.9	1.9	1.3	.9	.7	.4	.2	.1	.....	.....	.1
1889.....	32.8	40.2	14.0	5.1	2.7	1.8	1.3	.8	.6	.4	.2	.1	.....	.....	.1
1890.....	31.2	41.2	14.1	5.4	2.8	1.8	1.4	1.0	.5	.3	.2	.....	.....	.....	.1
Average, 1886-90.....	32.8	39.5	14.2	5.2	2.9	1.9	1.3	.9	.6	.4	.2	.1	.....	.....	.2
1891.....	31.0	41.7	13.6	5.3	2.8	1.9	1.3	1.0	.6	.4	.2	.1	.....	.....	.1

That these facts showing a tendency to the increased selection of later years for marriage are the indices of important changes in the constitution of the population and in the social conditions of the State, can scarcely be doubted. We saw, in the consideration of Table 36, that the relative number of foreign-born marriages was yearly becoming larger while the proportion of marriages of native-born inhabitants was diminishing.

Also, in Table 37, it appeared that a noticeable difference existed between the average ages of native and foreign-born persons married. The latter gave for both sexes a greater average age, and it is, therefore, possible to distinguish in the fact of an increased foreign element of population represented by an increased ratio of marriages of persons of foreign birth, one factor in the general rise of ages at the time of marriage.

Other and even more important causes are doubtless concerned in the change, of

which the general lengthening of the period of education both of young men and young women, and the large number of women who in early life make some for business or a profession a primary pursuit instead of matrimony, may be given instances in point.

Table 43 gives the primary facts according to the returns in regard to the number of persons married of each nativity at each period of age. It preserves in permanent

TABLE 43.—*Exhibiting, by sex and by nativity, the number of persons married*

State and counties.	Nativity.	Number of persons married								
		All ages.		Under 20.		20 to 25.		25 to 30.		30 and over.
		M.	F.	M.	F.	M.	F.	M.	F.	M.
State	Totals	19,231	19,231	324	5,955	7,489	8,027	6,015	2,624	2,380
	Native	12,611	13,336	272	4,566	5,414	5,559	3,595	1,620	1,487
	Foreign	6,603	5,890	52	1,255	2,066	2,298	2,418	931	912
	Unknown	17	505	—	134	9	170	2	73	1
Alcona	Totals	40	40	1	18	20	15	11	3	3
	Native	19	25	—	10	9	11	8	1	—
	Foreign	21	14	1	5	11	4	3	2	3
	Unknown	—	1	—	1	—	—	—	—	—
Alger	Totals	8	8	1	2	1	4	5	—	—
	Native	4	6	—	2	—	3	3	—	—
	Foreign	4	2	1	—	1	1	2	—	—
Allegan	Totals	351	351	7	122	139	130	99	46	46
	Native	303	321	7	113	130	120	76	42	42
	Foreign	48	27	—	9	9	9	23	3	4
	Unknown	—	3	—	—	—	1	—	1	—
Alpena	Totals	148	148	—	59	42	49	57	16	22
	Native	44	48	—	21	11	16	18	3	5
	Foreign	104	92	—	36	31	29	39	12	17
	Unknown	—	8	—	2	—	4	—	1	—
Antrim	Totals	104	104	1	54	50	29	24	8	17
	Native	77	78	1	43	38	18	19	8	10
	Foreign	27	23	—	10	12	10	5	—	7
	Unknown	—	3	—	1	—	1	—	—	—
Arenac	Totals	46	46	—	23	23	13	10	5	5
	Native	20	29	—	18	10	7	6	2	3
	Foreign	26	15	—	4	13	6	4	3	2
	Unknown	—	2	—	1	—	—	—	—	—
Baraga	Totals	36	36	—	14	15	14	12	4	7
	Native	16	16	—	7	10	7	3	—	3
	Foreign	20	18	—	5	5	7	9	4	4
	Unknown	—	2	—	2	—	—	—	—	—

TABLE 43.—CONTINUED.—*Marriages*

Counties.	Nativity.	Number of persons married.									
		All ages.		Under 20.		20 to 25.		25 to 30.		30 to 35.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Barry.....	Totals.....	212	212	5	78	103	89	55	18	18	8
	Native.....	200	198	5	76	101	87	51	13	17	8
	Foreign.....	12	7			2	1	4	3	1	
	Unknown.....		7		2		1		2		
Bay.....	Totals.....	508	508	11	183	208	207	162	59	54	23
	Native.....	264	293	10	120	132	124	72	24	23	11
	Foreign.....	244	195	1	55	76	76	90	32	31	13
	Unknown.....		20		8		7		3		
Benzie.....	Totals.....	80	60	1	30	22	19	20	3	5	5
	Native.....	43	49	1	27	17	15	12	1	5	3
	Foreign.....	17	10		3	5	4	8	1		2
	Unknown.....		1						1		
Berrien.....	Totals.....	425	425	8	113	167	183	133	66	39	23
	Native.....	348	357	8	103	146	157	103	55	30	20
	Foreign.....	75	53		8	21	20	29	10	9	3
	Unknown.....	2	15		2		6	1	1		
Branch.....	Totals.....	245	245	9	74	104	93	52	31	31	13
	Native.....	225	229	9	67	97	91	48	29	29	12
	Foreign.....	19	12		6	7	2	4	2	2	
	Unknown.....	1	4		1						
Calhoun.....	Totals.....	414	414	18	109	151	165	110	70	61	25
	Native.....	361	357	17	105	135	143	94	54	53	23
	Foreign.....	52	39	1	3	15	17	16	11	8	1
	Unknown.....	1	18		1	1	5		5		1
Cass.....	Totals.....	210	210	2	78	100	86	54	21	27	8
	Native.....	201	197	2	73	97	81	51	20	25	8
	Foreign.....	9	5		1	3	2	3	1	2	
	Unknown.....		8		4		3				
Charlevoix.....	Totals.....	84	84	1	33	30	34	27	8	10	2
	Native.....	53	64	1	27	21	27	16	4	6	1
	Foreign.....	31	18		6	9	6	11	4	4	1
	Unknown.....		2				1				
Cheboygan.....	Totals.....	89	89	2	40	36	32	27	7	12	4
	Native.....	43	55	2	27	23	17	7	3	8	4
	Foreign.....	46	29		10	13	14	20	3	4	
	Unknown.....		5		3		1		1		

PERSONS MARRIED BY NATIVITY AND PERIODS OF AGE.

by counties, by sex, and by nativity.

by groups of ages, 1891.

[illegible]

TABLE 43.—CONTINUED.—*Marriages*

Counties.	Nativity.	Number of persons married.									
		All ages.		Under 20.		20 to 25.		25 to 30.		30 to 35.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Chippewa	Totals	117	117	3	42	41	47	49	16	16	5
	Native	32	20	1	5	16	8	10	5	5	
	Foreign	84	92	2	35	25	36	39	11	10	5
	Unknown	1	5		2		3			1	
Clare	Totals	71	71		30	28	26	24	5	10	3
	Native	42	46		20	22	20	13	3	5	1
	Foreign	29	25		10	6	6	11	2	5	2
Clinton	Totals	246	246	3	82	119	99	62	40	32	12
	Native	219	210	3	71	110	86	56	35	26	9
	Foreign	27	19		2	9	10	6	4	6	1
	Unknown		17		9		3		1		2
Crawford	Totals	24	24	1	11	9	7	8	3	3	1
	Native	11	16	1	9	4	4	4	1	1	1
	Foreign	13	8		2	5	3	4	2	2	
Delta	Totals	159	159	1	45	43	61	71	37	19	5
	Native	55	73	1	27	14	32	23	10	9	1
	Foreign	104	86		18	29	29	48	27	10	4
Dickinson	Totals	41	41		10	10	22	20	5	6	2
	Native	8	9		5	3	2	4	1	1	1
	Foreign	33	32		5	7	20	16	4	5	1
Eaton	Totals	326	326	10	116	164	133	67	28	24	8
	Native	299	306	9	110	157	127	60	25	20	7
	Foreign	27	17	1	6	7	6	7	3	4	
	Unknown		3								1
Emmet	Totals	90	90	2	34	33	29	30	9	5	7
	Native	68	75	1	32	27	22	22	7	5	6
	Foreign	22	14	1	2	6	6	8	2		1
	Unknown		1				1				
Genesee	Totals	355	355	4	106	144	142	86	33	44	29
	Native	301	322	3	99	127	136	75	29	35	25
	Foreign	54	27	1	5	17	5	11	3	9	3
	Unknown		6		2		1		1		1
Gladwin	Totals	46	46		26	23	13	16	7	5	
	Native	26	23		12	13	8	9	3	3	
	Foreign	20	22		14	10	4	7	4	2	
	Unknown		1				1				

PERSONS MARRIED BY NATIVITY AND PERIODS OF AGE. 113

by counties, by sex, and by nativity.

by groups of ages, 1891.

35 to 40.		40 to 45.		45 to 50.		50 to 55.		55 to 60.		60 to 65.		65 to 70.		70 to 75.		75 to 80.		80 and over.		Both unknown.	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
	1	5	2	2	1	1	1														2
	1																				1
		5	2	2	1	1	1														1
3	3	2	1	4	2		1														
	1	1		1	1																
3	2	1	1	3	1		1														
11	4	7	6	7	2	2		2	1	1											
11	3	6	5	4	1	1		1		1											
		1	1	3		1		1	1												
	1				1																
		2	1	1	1																
		1			1																
		1	1	1																	
12	4	7	3	1	1	3	1	2	1		1										
4	1	1				1	1	2	1												
8	3	6	3	1	1	2				1											
2		1		1	2	1															
2		1		1	2	1															
15	11	9	5	7	8	7	5	10	8	2	3	7	1	4							
14	9	9	4	7	8	7	5	8	8	2	2	5	1	3							
1	1							4			1	2		1							
	1		1																		
6	3	4	2	6	3	2			1				1	2	1						
6	2	3	2	2	2	1			1				1	1							
	1	1		4	1	1								1	1						
20	12	9	9	15	8	9	6	7	5	6	3	6		2	2	2		1			
14	11	8	5	10	7	7	4	6	2	6	2	5		2	2	2		1			
6	1	1	3	5	1	2	2	1	3		1	1									
			1																		
		1				1															
		1																			
						1															

TABLE 43.—CONTINUED.—*Marriages*

Counties.	Nativity.	Number of persons married.									
		All ages.		Under 20.		20 to 25.		25 to 30.		30 to 35.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Gogebic	Totals	164	164	1	51	48	86	82	37	27	7
	Native.....	33	37		11	12	19	18	6	3	
	Foreign	131	124	1	39	36	45	64	31	24	7
	Unknown		3		1		2				
Grand Traverse	Totals	149	149	2	48	51	55	51	17	11	12
	Native.....	110	116	2	40	40	46	38	14	9	8
	Foreign	39	32		8	11	8	13	3	2	4
	Unknown		1				1				
Gratiot	Totals	275	275	4	106	125	111	77	25	28	11
	Native.....	240	244	2	96	112	101	66	22	25	9
	Foreign	34	20	2	8	12	8	11	2	3	
	Unknown	1	11		2	1	2		1		2
Hillsdale	Totals	270	270	9	87	119	108	68	28	24	16
	Native.....	263	237	9	85	117	94	67	25	24	12
	Foreign	7	8			2	3	1	1		2
	Unknown		25		2		11		2		2
Houghton	Totals	419	419	5	107	156	219	167	59	59	15
	Native.....	89	141	2	47	44	76	29	12	13	5
	Foreign	330	278	3	60	112	143	138	47	46	10
	Unknown										
Huron	Totals	261	261	1	103	111	104	86	28	28	7
	Native.....	97	127		67	59	46	24	9	5	3
	Foreign	164	132	1	36	52	57	62	19	23	4
	Unknown		2				1				
Ingham	Totals	390	390	7	127	175	167	106	47	36	14
	Native.....	336	347	6	119	159	146	89	39	28	14
	Foreign	54	37	1	7	16	18	17	7	8	
	Unknown		6		1		3		1		
Ionia	Totals	311	311	8	103	125	125	95	35	29	20
	Native.....	282	289	8	98	114	116	88	33	27	13
	Foreign	29	20		5	11	9	7	2	2	2
	Unknown		2								
Iosco	Totals	108	108		49	42	39	40	12	20	6
	Native.....	48	53		30	26	19	9	3	11	
	Foreign	60	52		17	16	19	31	9	9	6
	Unknown		3		2		1				

TABLE 43.—CONTINUED.—*Marriages*

Counties.	Nativity.	Number of persons married.									
		All ages.		Under 20.		20 to 25.		25 to 30.		30 to 35.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Iron	Totals	37	37	10	15	19	12	4	6	1	
	Native	5	8	2	4	6	1				
	Foreign	32	29	8	11	13	11	4	6	1	
Isabella	Totals	180	180	3	64	66	63	44	20	26	7
	Native	181	128	3	53	56	44	30	15	16	4
	Foreign	49	41	8	10	16	14	5	10	3	
	Unknown		11	3		3					
Jackson	Totals	391	391	10	105	146	158	106	67	53	23
	Native	380	338	10	93	129	140	90	58	42	19
	Foreign	61	37	7	17	12	16	6	11	4	
	Unknown		16	5		6		3			
Kalamazoo	Totals	402	402	5	81	144	184	111	63	49	25
	Native	320	334	5	73	122	151	88	49	35	21
	Foreign	80	64	7	20	31	23	13	14	4	
	Unknown	2	4	1	2	2		1			
Kalkaska	Totals	56	56	1	23	24	18	8	6		
	Native	51	44	1	20	21	17	7	5		
	Foreign	5	9	2	3	5	1	1	1		
	Unknown		3	1		2					
Kent	Totals	1,287	1,287	31	386	501	527	399	193	153	81
	Native	813	890	23	301	344	357	231	122	99	54
	Foreign	474	377	8	80	157	164	168	70	54	26
	Unknown		20	5		6		1			1
Keweenaw	Totals	22	22	9	11	10	8	2			
	Native	3	7	3	3	3		1			
	Foreign	19	15	6	8	7	8	1			
Lake	Totals	40	40	1	13	16	14	10	8	6	4
	Native	29	28		8	13	11	7	4	2	4
	Foreign	11	8	1	2	3	3	3	4		
	Unknown		4	3				1			
Lapeer	Totals	251	251	4	72	106	107	66	27	26	13
	Native	183	186	4	56	82	82	45	20	20	7
	Foreign	68	64		16	24	25	21	7	6	5
	Unknown		1								1
Leelanau	Totals	61	61	1	26	19	20	17	3	12	4
	Native	38	43	1	23	10	15	11	1	10	2
	Foreign	23	18	3	9	5	6	2	2		2

PERSONS MARRIED BY NATIVITY AND PERIODS OF AGE. 117

by counties, by sex, and by nativity.

by groups of ages, 1891.

[illegible]

TABLE 43.—CONTINUED.—*Marriages*

Counties.	Nativity.	Number of persons married,									
		All ages.		Under 20.		20 to 25.		25 to 30.		30 to 35.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Lenawee	Totals	392	392	7	109	182	178	107	58	38	19
	Native	350	354	7.	104	174	160	94	53	32	17
	Foreign	42	29		3	8	16	13	3	6	1
	Unknown		9		2		2		2		1
Livingston	Totals	152	152	4	43	55	60	45	28	25	7
	Native	138	143	4	40	51	57	40	26	21	7
	Foreign	14	7		2	4	3	5	1	4	
	Unknown		2		1				1		
Luce	Totals	30	30		7	9	11	10	7	5	2
	Native	8	9		3	2	1	3	3	1	1
	Foreign	22	20		3	7	10	7	4	4	1
	Unknown		1		1						
Mackinac	Totals	71	71		23	22	23	27	10	15	3
	Native	37	44		20	11	11	15	8	8	2
	Foreign	34	27		3	11	12	12	2	7	1
Macomb	Totals	255	255	7	61	85	143	102	25	33	15
	Native	182	194	6	49	64	114	72	15	23	9
	Foreign	73	60	1	12	21	28	30	10	10	6
	Unknown		1				1				
Manistee	Totals	211	211	3	84	78	82	78	21	19	10
	Native	83	111	2	48	36	43	24	9	5	7
	Foreign	128	99	1	35	42	39	54	12	14	3
	Unknown		1		1						
Manitou	Totals	1	1					1	1		
	Native	1	1					1	1		
Marquette	Totals	468	468	4	111	196	224	189	92	48	22
	Native	85	117		38	33	57	33	16	11	2
	Foreign	383	351	4	73	163	167	156	76	37	20
Mason	Totals	131	131	2	51	47	44	42	19	14	5
	Native	76	88	1	39	33	28	21	10	8	3
	Foreign	55	43	1	12	14	16	21	9	6	2
Mecosta	Totals	181	181	4	70	67	64	55	21	17	9
	Native	122	121	3	51	53	44	30	8	7	4
	Foreign	59	46	1	16	14	16	25	11	10	2
	Unknown		14		3		4		2		3

PERSONS MARRIED BY NATIVITY AND PERIODS OF AGE.

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by counties, by sex, and by nativity.

by groups of ages, 1891.

[illegible]

TABLE 43.—CONTINUED.—*Marriages*

Counties.	Nativity.	Number of persons married.									
		All ages.		Under 20.		20 to 25.		25 to 30.		30 to 35.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Menominee	Totals	233	233	1	61	73	105	82	36	48	14
	Native	54	63		24	24	28	13	6	12	2
	Foreign	179	165	1	36	49	75	69	28	36	12
	Unknown		5		1		2		2		
Midland	Totals	104	104	5	50	42	35	26	7	16	2
	Native	67	63	5	35	31	21	15	2	6	1
	Foreign	35	24		6	11	12	11	1	10	1
	Unknown	2	17		9		2		4		
Missaukee	Totals	61	61	1	29	22	20	25	3	5	4
	Native	35	38	1	23	19	8	10	2	1	3
	Foreign	26	21		5	3	12	15	1	4	3
	Unknown		2		1						
Monroe	Totals	308	308	7	90	125	139	95	44	36	13
	Native	272	280	7	83	118	129	83	42	28	12
	Foreign	35	28		6	6	7	12	2	8	
	Unknown	1	5		1	1	3				
Montcalm	Totals	299	299	4	127	110	83	84	39	39	26
	Native	239	246	4	114	100	67	54	30	35	19
	Foreign	60	40		10	10	13	30	7	4	4
	Unknown		13		3		3		2		3
Montmorency	Totals	6	6		2	3	2	1			
	Native	3	3		1	2	1				
	Foreign	3	2			1	1	1			
	Unknown		1		1						
Muskegon	Totals	382	382	11	114	136	157	122	63	55	20
	Native	225	231	8	87	91	92	65	26	24	11
	Foreign	157	145	3	26	45	63	57	36	31	9
	Unknown		6		1		2		1		
Newaygo	Totals	169	169	1	67	69	62	49	17	21	5
	Native	129	135	1	60	61	48	36	10	12	3
	Foreign	39	29		3	7	13	13	7	9	2
	Unknown	1	5		4	1	1				
Oakland	Totals	288	288	5	71	100	126	85	45	41	15
	Native	249	242	5	66	90	108	73	35	38	10
	Foreign	39	32		4	10	12	12	8	3	5
	Unknown		14		1		6		2		

PERSONS MARRIED BY NATIVITY AND PERIODS OF AGE. 121

by counties, by sex, and by nativity.

by groups of ages, 1891.

35 to 40.		40 to 45.		45 to 50.		50 to 55.		55 to 60.		60 to 65.		65 to 70.		70 to 75.		75 to 80.		80 and over.		Both unkn'wn.	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
14	7	8	5	2	1	2	2	1	1	1	1									1	1
1	1	3	1																	1	1
13	6	5	4	2	1	2	2	1	1	1	1										
5	1	1	2	3	3	2			4	1	1									1	1
3		1	1	1	2	1			3	1	1										
1	1		1	2	1				1											1	1
1						1															
4	1	1	1	1	1	1	1	1					1								
1	1	1	1	1	1	1															
3								1					1								
						1															
14	7	12	6	9	3	2	4	1	3	2	3	1			1						
13	4	9	4	7	1	2	3	1	3	1	1	1									
1	3	3	2	2	2	1					2				1						
											1										
22	10	16	4	7	4	6	1	5	2	3	1	2	2	1							
17	7	11	1	5	4	3		5	2	2	1	2	1	1							
5	3	5	3	2	3				1												
						1						1									
	1		1	1				1													
	1			1																	
			1					1													
19	10	12	5	7	4	8	4	5	2	5	2	2	1								
13	7	9	2	5	2	5	3	2	1	1		2									
6	3	3	3	2	2	3		3	1	4	1		1								
						1				1											
10	5	5	4	7	5	3	3	2	1	1	1										
7	4	3	4	4	3	2	3	1		1		1									
3	1	2		3	2	1		1		1											
18	8	10	9	7	8	5	3	4	2	5	1	6	1	1	1	1					
14	4	9	6	5	6	4	2	2	2	3	1	5	1		1	1					
4	1	1	1	2	1	1		2		2		1		1							
	1		2	1		1															

TABLE 43.—CONTINUED.—*Marriages*

Counties.	Nativity.	Number of persons married.									
		All ages.		Under 20.		20 to 25.		25 to 30.		30 to 35.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Oceana	Totals	114	114	2	47	45	37	33	8	9	8
	Native	93	94	2	39	41	34	25	4	8	5
	Foreign	21	18		6	4	3	8	4	1	3
	Unknown		2		2						
Ogemaw	Totals	46	46		16	20	17	10	7	9	4
	Native	25	25		11	11	8	7	4	5	2
	Foreign	21	21		5	9	9	3	3	4	2
Ontonagon	Totals	33	33		12	9	17	13	1	7	2
	Native	17	23		8	5	13	4	1	4	1
	Foreign	16	10		4	4	4	9		3	1
Osceola	Totals	135	135	2	55	58	39	27	15	13	6
	Native	94	95	2	45	45	28	22	7	5	6
	Foreign	41	33		10	13	10	15	8	8	
	Unknown		7				1				
Oscoda	Totals	12	12		8	5	3	6			
	Native	8	11		7	4	3	3			
	Foreign	4	1		1	1		3			
Otsego	Totals	36	36	1	14	15	14	10	4	6	3
	Native	28	20		8	12	8	7	1	5	2
	Foreign	8	12	1	6	3	4	3	1	1	1
	Unknown		4				2		2		
Ottawa	Totals	245	245	7	79	111	106	62	27	25	11
	Native	172	175	5	61	83	79	45	22	16	4
	Foreign	73	61	2	15	28	24	17	5	9	6
	Unknown		9		3		3				1
Presque Isle	Totals	30	30		22	13	3	11		1	1
	Native	10	20		17	7	2	1			1
	Foreign	20	10		5	6	1	10		1	
Roscommon	Totals	16	16		5	4	7	5	2	3	
	Native	7	12		4	3	5	1	1	2	
	Foreign	9	4		1	1	2	4	1	1	
Saginaw	Totals	691	691	8	200	243	310	228	86	108	38
	Native	421	429	8	147	165	198	144	47	54	18
	Foreign	265	223		44	75	94	83	34	54	19
	Unknown	5	39		9	3	18	1	5		1

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by groups of ages, 1891.

[illegible]

TABLE 43.—CONTINUED.—*Marriages*

Counties.	Nativity.	Number of persons married,									
		All ages.		Under 20.		20 to 25.		25 to 30.		30 to 35.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Sanilac	Totals	220	220	5	73	71	97	78	21	30	12
	Native	91	122	3	46	39	59	33	8	9	4
	Foreign	129	94	2	26	32	38	45	11	21	8
	Unknown		4		1				2		
Schoolcraft	Totals	78	78	1	30	23	20	25	11	11	5
	Native	35	35	1	24	13	8	12	2	3	
	Foreign	38	37		6	10	11	13	9	8	5
	Unknown		1				1				
Shiawassee	Totals	307	307	3	111	132	119	88	37	38	13
	Native	264	274	3	104	116	109	74	32	31	12
	Foreign	48	27		6	16	10	14	4	7	1
	Unknown		6		1				1		
St. Clair	Totals	488	488	3	115	157	235	172	75	80	28
	Native	275	290	2	67	108	152	98	45	50	15
	Foreign	213	189	1	47	54	79	74	28	30	13
	Unknown		9		1		4		2		
St. Joseph	Totals	229	229	3	75	102	93	53	30	36	12
	Native	212	212	3	69	97	87	49	27	34	11
	Foreign	17	17		6	5	6	4	3	2	1
	Unknown										
Tuscola	Totals	252	252	5	109	115	86	75	28	22	10
	Native	170	196	5	98	98	67	43	19	11	8
	Foreign	82	50		14	22	18	32	6	11	2
	Unknown		6		2		1		1		
Van Buren	Totals	273	273	11	105	116	98	72	29	26	11
	Native	244	245	11	96	109	83	63	26	22	11
	Foreign	29	11		3	7	3	9	2	4	
	Unknown		17		6		7		1		
Washtenaw	Totals	355	355	8	61	138	187	118	73	58	18
	Native	278	282	3	52	111	151	94	53	39	13
	Foreign	77	62		8	27	31	24	17	19	4
	Unknown		11		1		5		3		1
Wayne	Totals	2,285	2,285	18	491	824	1,089	799	387	289	152
	Native	1,051	1,184	11	281	397	568	352	192	145	74
	Foreign	1,234	1,052	7	199	427	499	447	182	144	75
	Unknown		49		11		22		13		8
Wexford	Totals	120	120	2	52	42	36	41	18	14	9
	Native	78	90	1	48	30	22	25	9	9	7
	Foreign	42	29	1	4	12	13	16	9	5	2
	Unknown		1				1				

PERSONS MARRIED BY NATIVITY AND PERIODS OF AGE. 125

by counties, by sex, and by nativity.

by groups of ages, 1891.

35 to 40.		40 to 45.		45 to 50.		50 to 55.		55 to 60.		60 to 65.		65 to 70.		70 to 75.		75 to 80.		80 and over.		Both unkn'wn.	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
11	12	10	3	7		4		1			1	3	1								
1	4	2	1	2		2															
10	7	8	2	5		2		1			1	3	1								
	1																				
6	5	2		2		1	2	1		1											
3				2			1	1													
3	5	2				1	1			1											
16	5	9	6	5	6	3	5	8	4	3		2	1								
15	4	7	2	5	4	2	5	6	2	3		2									
1		2	1		2	1		2	2				1								
	1		3																		
29	11	14	7	13	4	5	5	5	4	4	3	2		2	1	1		1			
8	7	3		3	1		2	3	1	2		1		2							
21	4	11	7	10	3	5	2	2	3	2	2	1			1	1		1			
							1				1										
6	6	9	5	8	3	5	2			3	2	2	1	2							
5	5	9	5	7	3	4	2			1	2	2	1	1							
1	1			1		1				2				1							
8	5	8	4	6	4	5	2	3	2	2	4	2		1							
5	8	5	1	8	2	1		2	1		2	2									
3	2	3	2	3	1	4	2	1	1	2	2			1							
			1		1																
10	10	6	8	7	4	12	4	2	5	1	3	6		3	1	1					
9	8	6	8	6	3	8	4	2	4	1	2	5		2							
1	2			1	1	4						1		1		1					
									1		1				1						
15	10	10	3	6		4	2	2	1			1									
13	8	8	3	6		4	1		1												
2	1	2					1	2				1									
	1																				
142	78	88	33	56	21	29	15	25	11	9	7	6	1	4		1					
65	35	32	14	20	8	12	7	12	3	2	2			2		1					
77	43	51	19	36	13	17	8	13	8	7	5	6	1	2							
11	1	7	2	1			2	2													
6	1	5	1				2	2													
5		2	1	1																	

DIVORCES.

The State of Michigan makes no provision by law for the collection of any information on the very important subject of divorce as a part of the general subject of vital statistics. The number of divorces for the years 1867-1886, as collected by the United States Commissioner of Labor in 1889, is printed in Part I of the report, and comparison of their number with the number of marriages recorded for those years shows sufficiently how large an element of vital information is here neglected. When any comparisons are made between the number of children born in any year or series of years with the number of marriages or married persons in the community, it is evident that the net number of marriages, that is, the actual increase of married couples, should enter into consideration.

The laws relating to the solemnization of marriages and the collection of marriage statistics are given in the Appendix.

PART IV.—DEATHS IN MICHIGAN DURING THE YEAR 1891.

The subject of mortality has generally been considered the most valuable part of a registration report. The knowledge of the absolute and relative importance and conditions of prevalence of the diseases which principally constitute the *causes of death* in Michigan can be regarded as secondary only to the knowledge of the means to be employed for their prevention and restriction. Such statistical study of deaths, and, so far as possible, an exhibition of the conditions and causes affecting their number in this and preceding years, it is the object of this portion of the report to present.

The study of diseases in themselves, except only as affecting the death-rate, does not come within its scope. The seal of the State Board of Health justly pictures Vital Statistics as the keystone of the arch upon which the structure typifying the public health is supported. The correctness and completeness of its data are essential to advancement in Sanitary Science and State Medicine, not less for suggesting directions in which sanitary work is needed than for verifying and confirming the results of such work when performed. Nevertheless, with the practical application of any deductions which may be drawn from the statistical study of diseases as causes of death, this report is not particularly concerned. It is only hoped that the facts here presented may be found to be so arranged and digested as to be readily accessible and reliable for the use of practical workers and writers in the interests of medicine and public health.

As usual, this portion of the report naturally divides itself into two sections: (1) the *occurrence of deaths*, as affected by the different seasons of the year, the sex, age, color and nativity of decedents; and (2) the *causes and conditions of deaths*. It should not be understood that the second division fails to study the factors mentioned in the preceding, but that it groups and classifies them with reference to particular diseases instead of simply showing their relation to total mortality.

SECTION I.—OCCURRENCE OF DEATHS IN MICHIGAN DURING THE YEAR 1891.

The total number of deaths recorded for the year 1891 was 22,079. Of this number there were 11,908 male decedents and 9,998 female decedents, leaving a remainder of 173 of unstated sex. Still-births are included in the above figures to the number of 1,090; of the 173 deaths returned in which the sex was not specified, 73 were still-births.

As regards nativity, there were 16,287 decedents returned as native-born and 4,811 as foreign-born, leaving 981 of unstated nativity. Only 342 were colored; of these 174 were blacks, 72 mulattoes, and 96 Indians.

The death-rate for the year was 10.3 per 1,000 living population (estimated). The rate for 1891 may be compared with the rates for previous years stated in Exhibit E, Part I, and the various rates for the counties may be seen in Exhibit G, Part I. There was an unusually large number of townships in 1891 unreturned. The aggregate population of these as stated in Table 59 was 42,377. The death-rate based on population actually represented by returns of deaths was 10.6 per 1,000.

Synopsis of tables relating to occurrence of deaths by months, age, sex, and nativity of decedents.

Tables.	Deaths in Michigan, 1891.
44	Number of deaths returned in Michigan for 1891, by quarters, compared with the years 1889, 1890, and with the average for ten years, 1881-90.
45	Number of deaths returned in Michigan for 1891, by months, greatest first, compared with the years 1889, 1890, and with the average for ten years, 1881-90.
46	Number and per cent of deaths of each sex returned for each year from 1882 to 1891.
47	Comparison, by ages, of the number of deaths of each sex returned for the year 1891.
48	Comparison of the per cents of deaths at certain periods of age for ten years, 1882-91.
49	Comparison of the per cents of deaths at certain periods of age to the total deaths at all ages, by months; also, the per cent of deaths in each month for those ages to total deaths for the year.
50	Statement, by sex and ages, in periods of years, of the number of deaths returned in Michigan for each month of the year 1891.
51	Statement, by sex and ages in years (in months for those less than 1 year), of the number of deaths in Michigan during the year 1891.
52	The average age of decedents, by nativity, for the year 1891, and comparison with the years 1889, 1890, and the ten-year average, 1881-90.
<i>Infant mortality, 1891.</i>	
53	Number of still-births returned in 1891, and per cent of total deaths; comparison with the years 1889, 1890, and with the average for ten years, 1881-90.
54	Number of infants dying under one year of age in 1891; showing the number dying at each age, in months, for every month of the year; also the months of birth of such children in 1890 and in 1891.
55	Comparison of the number of deaths of infants born in 1890 and dying in 1890 and 1891, aged less than one year, with the total number of births in 1890, by sex and months.
56	Statement of the months of deaths in 1890 and 1891 of the infants born in 1890, who died aged under one year, showing the total number dying at each age in months, and the per cents of deaths under one month to total deaths under one year and to total births, by months.
57	Comparison of the deaths of infants aged under one month to the number of births returned, for each month of the year 1891.
58	Particulars relating to centenarians dying in Michigan in 1891.
59	List of counties and townships making no returns of deaths in 1891, showing population in 1890.
60	List of townships in which it was reported that there were no deaths in 1891, with population in 1890.
61	Detailed statement for the State and counties of the number of deaths, by sex, for each month and for each period of age.
62	General comparison of the number of deaths returned in Michigan for the year 1891, with the population as stated by the United States census of 1890, distinguishing sex, nativity and color. Also the per cents of deaths of each sex to the total deaths of each color and nativity.
63	Detailed statement for the State and counties of the number of deaths, by sex, of each color and race in Michigan during the year 1891.
64	Comparison of the numbers and per cents of deaths of each nativity in 1891 with the years 1889, 1890, and the ten-year average for 1881-90.
65	Detailed statement for the State and counties of the number of deaths, by sex, of each nativity in Michigan during the year 1891.
66	Comparison of the number of deaths in 1890 and 1891, by nativity, for each period of age, with the corresponding population as stated by the United States census of 1890.

DEATHS BY QUARTERS AND MONTHS.

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TABLE 44.—Deaths in Michigan, by quarters of the year, exhibiting the number and per cent of totals, as returned for the years 1889-91, and comparison with the average for ten years, 1881-90.

Year and quarters.	1889.		1890.		1891.		Average for 10 years, 1881-90.	
	Numb'r.	Per ct.	Numb'r.	Per ct.	Numb'r.	Per ct.	Numb'r.	Per ct.
Year.....	20,315	100.0	21,642	100.0	22,079	100.0	18,866	100.0
Quarter ending March 31.....	4,351	21.4	5,119	23.7	4,645	21.0	4,008	21.2
Quarter ending June 30.....	4,428	21.8	5,145	23.8	5,366	24.3	4,394	23.3
Quarter ending September 30.....	5,916	29.1	5,773	26.7	5,798	26.3	5,371	28.5
Quarter ending December 31.....	5,557	27.4	5,574	25.8	6,222	28.2	5,035	26.7
Unknown month.....	68	.3	31	.1	48	.2	58	.3
Average *.....	5,079	25.0	5,411	25.0	5,520	25.0	4,717	25.0

* Average includes deaths in unknown month.

TABLE 45.—Exhibiting, by months, the number and per cent of deaths returned for the years 1889-1891, and the average for ten years 1881-1890, the months in order of greatest first.

Order.	1889.			1890.			1891.			Average for 10 years, 1881-1890.		
	Year and months.	Num-ber.	Per cent of total.	Year and month.	Num-ber.	Per cent of total.	Year and month.	Num-ber.	Per cent of total.	Year and month.	Num-ber.	Per cent of total.
	Year..	20,315	100.0	Year....	21,642	100.0	Year....	22,079	100.0	Year..	18,866	100.0
1	Aug...	2,214	10.9	Aug....	2,082	9.4	Dec....	2,351	10.6	Aug...	1,911	10.1
2	Sept..	2,025	10.0	Dec....	2,027	9.4	Aug....	2,147	9.7	Sept..	1,860	9.9
3	Dec...	1,961	9.6	Sept....	1,892	8.7	Apr....	2,074	9.4	Dec...	1,767	9.4
4	Oct...	1,894	9.3	July....	1,849	8.5	Oct....	2,011	9.1	Oct...	1,709	9.1
5	Nov...	1,712	8.4	Oct....	1,808	8.4	Sept....	1,973	8.9	July...	1,900	8.5
6	July...	1,677	8.3	Apr....	1,808	8.4	Nov....	1,860	8.5	Nov...	1,559	8.3
7	Mar..	1,676	8.3	Mar....	1,775	8.2	Mar....	1,774	8.0	Apr....	1,589	8.2
8	Apr...	1,585	7.8	Jan....	1,745	8.1	May....	1,782	7.8	Mar...	1,522	8.1
9	May...	1,454	7.2	Nov....	1,739	8.0	July....	1,678	7.6	May...	1,497	7.9
10	Jan....	1,409	6.9	May....	1,704	7.9	June....	1,560	7.1	June..	1,358	7.2
11	June...	1,389	6.8	June....	1,633	7.6	Jan....	1,486	6.7	Feb....	1,265	6.7
12	Feb....	1,266	6.2	Feb....	1,599	7.4	Feb....	1,385	6.3	Jan...	1,221	6.5
	Unk...	63	.3	Unk....	31	.1	Unk....	48	.2	Unk...	58	.3
	Av.*...	1,693	8.3	Av.*....	1,804	8.3	Av.*....	1,840	7.7	Av.*...	1,572	8.3

* Includes unknown month.

Tables 44 and 45 compare the total number of deaths registered for 1891 with the numbers returned for the preceding two years and also with the ten-year average for 1881-1890. In Table 44 the comparison is made by quarters of the year, in order, while in Table 45 are given the numbers returned for each month, the months being arranged in the order of the numbers returned.

The total number of deaths is seen to be larger than for the preceding years; it exceeds the ten-year average by over 3,000 deaths. This does not indicate a greatly increased rate of mortality if allowance be made for a reasonable increase of population. By referring to Exhibit E, p. 10 of this report, the death-rate per 1,000 inhabitants for 1891 will be seen to be precisely the same as that for 1890, namely, 10.3 per 1,000. The death-rates for both years, 1890 and 1891, are somewhat higher than those for the years immediately preceding.

About the same number of deaths was reported in each year as caused by influenza—1,086 in 1890, 1,076 in 1891—and to the prevalence of this epidemic may probably be chiefly attributed the rise in the death-rate. The average death-rate for the five years 1885-89 was 9.8. A rise of .5 per 1,000 inhabitants, calling the population about 2,100,000, would represent the addition of 1,050 deaths, which is very close to the number actually returned from this cause. It might appear from this that the rise in the death-rates for the two years has been due solely to the deaths caused by influenza, and that otherwise, so far as can be judged from the returns, the public health has been in an average condition. It is probable that this is not quite true as the tendency is very marked in the presence of an epidemic to attribute deaths from other causes to its influence, thereby increasing its mortality at the expense of other diseases. To this tendency must be opposed the fact that the "grippe" did actually increase the number of cases of certain diseases, especially those of the respiratory organs, and thus, in some measure, the tendencies to error counteracted each other. This subject will be further discussed in considering Causes of Death, where the numbers and rates per 100,000 inhabitants for different diseases in 1891 are compared with previous years.

So far as the distribution of mortality through the different months and quarters of the year is concerned, it should be remembered that these tables refer solely to deaths *returned*, not to all deaths actually occurring. Could we know the actual distribution of deaths through the year it would, doubtless, be quite different from the order given in Tables 44 and 45. Comparing the number of deaths returned for the months of any registration year, it will be observed that, in general, larger numbers are returned for the latter months of the year, which are nearer to the date of enumeration in May of the year following, and that smaller numbers are returned for the early months of the year which are more remote in time from that date.

If a series of years be studied, as may readily be done in Exhibit I, p. 30, for births as well as deaths, a sudden drop in the numbers returned will always be noted in passing from December of one year to January of the following year. Thus for December, 1890, there were registered 2,027 deaths; for January, 1891, only 1,496 deaths are recorded, a fall of 541 from the number given for the previous month. In like manner in passing from December, 1889, to January, 1891, there is a decrease of 206 deaths;* from December, 1888, to January, 1889, a fall of 603 deaths; from December, 1887, to January, 1888, a fall of 327 deaths, and so on, a similar disproportion existing in varying amounts between the adjacent months of each two consecutive years.

*The number of deaths returned for January, 1891, was unusually high on account of influenza and other causes, and the

registered for January, 1890, was unusually high on account of influenza and was noted is therefore less than usual.

That the differences between December and January are due to lapses of enumeration and not to actual differences in the number of deaths occurring in them, is proved by comparison with the returns of the United States or State censuses in which the two months are more on an equality in regard to time before enumeration than in the registration returns.

The census is taken in June for the year *immediately* preceding. Deaths in December are recorded in the sixth month after their occurrence and those in January in the fifth month thereafter. A difference of only one month exists between the two months instead of the difference of twelve months between them, as returned in consecutive registration years. If the ratio between the census figures be, therefore, applied to the registration figures, and a sufficient number of deaths be added to the January returns of each year to cause them to stand in the same relation to the returns for December of the preceding year as the census figures for those months sustain, it is evident that a *correction* will have been applied to the deaths as returned which brings their number demonstrably closer to the actual number occurring. A similar correction, graduated for the different amounts of time elapsing, can be applied to each month of the year, and the aggregate amount of changes for each month be taken as the total correction for the year. Comparison of such corrections for a series of years is made in the Exhibit following.

The theory of these corrections, as outlined above, and the manner of their computation were very thoroughly worked out by Dr. Henry B. Baker, Secretary of the State Board of Health, while Superintendent of Vital Statistics, and a method based upon his conclusions has been employed each year, since 1870, in making estimates of the probable number of births and deaths actually occurring in each month. Exceptions may possibly be made to this statement so far as regards the two years 1889 and 1890, for which the number of deaths was said to be "corrected by the system used in the United States census reports."* This statement, if it means anything at all, refers probably to an attempt to use Dr. Baker's method, which is referred to and employed by Dr. Billings in the Mortality Report† of the tenth United States census.

While full credit, therefore, should be given to Dr. Baker for the establishment of what may be called the Michigan method of correction of defective registration returns, the results stated in these recent Reports should not be charged upon the system. For instance, in 1890, the simple expedient was hit upon of increasing the returns of deaths for each month by an additional one per cent of increase over the month following. In the same manner the "corrected" births show a 2 per cent differential rate between each month. It is needless to say that such changes were purely arbitrary and not based upon a full understanding of the problem presented.

The following exhibit has been prepared to show the amount and per cent of corrections, according to this system, as stated in the reports of each year from 1871 to 1890.

* Twenty-third Michigan Registration Report, p. 89; Twenty-fourth Michigan Registration Report, p. 90.

† Part I, p. xl.

EXHIBIT.—*Showing the number of "DEATHS RETURNED" and "DEATHS CORRECTED" for each year from 1871 to 1890, with the number and per cent of deaths added as "corrections"; also the rates per 1,000 of deaths as returned and as corrected for each year, calculated to estimated population and compared with the "corrected death-rates" as given in the Vital Statistics Reports for each year.*

Year.	Deaths as returned.	Deaths as corrected.	Deaths added as corrections.	Per cent added.	Death-rates per 1,000 population.*		Corrected death- rates as given in reports of each year.
					As returned.	As corrected.	
1871	9,728	15,865	5,987	61.98	7.9	12.7	-----
1872	13,871	21,071	7,700	57.94	10.5	16.5	-----
1873	14,258	20,243	5,985	42.67	10.8	15.3	-----
1874	12,500	20,090	7,590	60.94	9.1	14.7	-----
1875	11,990	17,289	5,299	44.20	8.5	12.3	13.0
1876	12,576	18,389	5,813	46.34	8.6	12.6	13.9
1877	12,919	18,341	5,422	41.96	8.6	12.2	13.8
1878	12,766	18,866	6,100	47.78	8.2	12.2	14.2
1879	14,407	20,583	6,176	42.86	9.0	12.9	15.6
1880	16,102	26,256	10,154	63.06	9.8	16.0	16.2
1881	19,228	27,887	8,149	42.35	11.4	16.8	16.9
1882	16,425	27,306	10,881	66.24	9.5	15.8	16.7
1883	16,906	23,640	6,734	39.83	9.5	13.3	14.5
1884	18,056	25,183	7,077	39.19	9.9	13.8	13.6
1885	16,646	22,704	6,058	36.39	8.9	12.2	12.3
1886	18,187	25,210	7,023	38.61	9.5	13.2	13.6
1887	19,482	27,251	7,769	39.87	9.9	13.9	14.8
1888	21,764	26,043	4,279	19.66	10.8	13.0	14.1
1889	20,315	27,461	7,146	35.17	9.9	13.4	14.9
1890	21,642	23,789	2,147	9.92	10.3	11.4	12.8

* Estimated population for inter-census years. See Exhibit E, page 10.

It is evident from an inspection of this exhibit that there has been much variation in the results obtained in different years, and, presumably, some differences in the manner of working out the corrections. For the years 1879-1882 the rates as stated in the Reports were large enough to pass as reasonably near the truth. The rate for 1879 was based upon the census of 1874, with no allowance for increase of population during five years. When such allowance is made, it shrinks to 12.9 per 1,000. The corrected numbers for 1880-82 were obtained by adding an enormous number of deaths (relatively) to the returns, amounting in 1882 to 66.24 per cent. The year 1881 was one in which the mortality was unusually great (see Diagram I), but owing, doubtless, to the fact that a larger number of deaths was actually returned, the number added as correction was smaller than for either 1880 or 1882. The death-rates of the three years are thus equalized so that they show less variation than often obtained between two average years. Another curious feature, as witness the years 1887-90, is the fact that years in which a larger number of deaths were returned are so "corrected" as to show a smaller death-rate than years in which a less number of deaths were returned. This implies a very

intimate knowledge of what the number of deaths *ought to be*, irrespective of any light cast upon the subject by the returns. It is evident that the whole subject needs overhauling if it is to be made of any practical use. For the reason that certain necessary data—the statement of the numbers of births and deaths in each month according to the last census—are not available at present, no attempt is made to do more than to exhibit the present status of the subject in this report. All the tables presented are formed from the actual returns.

TABLE 46.—*Number and per cent of deaths of males and females returned in Michigan for twelve years, 1880-91. (Unknown sex excluded.)*

Years.	Deaths of males as returned.	Deaths of females as returned.	Deaths of males to 100 deaths of females.	Per cent of each sex to total of both sexes.		
				Males.	Females.	Excess of males.
1880.....	8,645	7,410	116.7	53.9	46.2	7.7
1881.....	10,263	8,910	115.2	53.5	46.5	7.6
1882.....	8,713	7,664	113.7	53.2	46.8	6.4
1883.....	9,101	7,748	117.5	54.0	46.0	8.0
1884.....	9,589	8,385	114.4	53.4	46.7	6.7
1885.....	9,025	7,569	119.2	54.4	45.6	8.3
1886.....	9,725	8,402	115.7	53.7	46.4	7.3
1887.....	10,563	8,877	119.0	54.3	45.7	8.7
1888.....	11,722	10,024	116.9	53.9	46.1	7.8
1889.....	10,984	9,297	118.1	54.2	45.8	8.3
1890.....	11,301	9,771	120.7	54.5	45.5	9.0
1891.....	11,908	9,998	119.1	54.4	45.6	8.8
Average of twelve years—1882-91.....	10,170	8,672	117.3	54.0	46.1	7.9

Table 46 states the proportions of the sexes of decedents for the preceding twelve years. Each year of the period shows a larger number of deaths of males, the ratio ranging from 113.7 males to 100 females in 1882 to 120.7 males to 100 females in 1890. The year 1891 shows a high proportion of male deaths, being exceeded in this respect only by 1890.

As the number of male inhabitants of the State is greater than the number of females, some further comparisons are necessary in order to ascertain whether the death-rate per 1,000 is actually greater among males.

VITAL STATISTICS OF MICHIGAN, 1891.

Comparison of mortality rates, by sex, in recent census years.

Year.	Population.		Number of deaths.		Rates per 1,000.	
	Males.	Females.	Males.	Females.	Males.	Females.
1880.....	862,355	774,582	8,645	7,410	10.0	9.6
1884*.....	974,424	879,028	9,539	8,385	9.8	9.5
1890.....	1,091,780	1,002,109	11,801	9,771	10.8	9.8

* State census: 206 persons of unknown sex not included.

From this showing it would appear that the death-rate is really higher for males than for females, the difference being equal to 1 per 1,000 (.1 per cent) in 1890.

The relations of sex to mortality at different ages may be studied for the year 1891 in Table 47. Nearly one-quarter of all deaths recorded for the year are those of infants under one year of age, and over one-third of the total deaths are those of children under five. Male decedents outnumber the female decedents in every period of age except those in which the diseases incident to childbearing come into play. For the years lying between the ages of fifteen and fifty the excess of deaths of males is seen to be greatly diminished, and for certain periods of this time the deaths of females are more numerous. As noted under the preceding table the males form the larger portion of the inhabitants, so that a numerical excess at each age would be expected to occur. Whether the mortality rate in proportion to the number of each sex at each period of age was greater at certain ages, requires a statement of the population by sex at different periods of age, which could not be obtained from the census office in time for this report.

TABLE 47.—*Exhibiting, by sex, and by age in periods of years, the number and proportion of persons returned as having died in Michigan during the year 1891.*

Ages in years and periods.	Number of deaths, 1891.				Per cent of deaths at each age to total of all ages.			Per cent of each sex to total of both sexes.*				Excess of the sexes by numbers.		Males to 100 females.
	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Males.	Females.	Excess.		Males.	Females.	
										Males.	Females.			
All ages.....	22,079	11,908	9,998	173	100.0	100.0	100.0	54.4	45.6	8.8		1,910		119
Under 1	5,458	2,983	2,387	88	24.7	25.1	23.9	55.5	44.5	11.2		596		124
1 to 2.....	1,045	553	487	5	4.7	4.7	4.9	53.2	46.8	6.4		66		113
2 to 3.....	508	266	242		2.3	2.2	2.4	52.4	47.6	4.8		24		109
3 to 4.....	365	194	170	1	1.7	1.6	1.7	53.3	46.7	6.6		24		114
4 to 5.....	289	166	123		1.3	1.4	1.2	57.4	42.6	14.8		43		135
All under 5.....	7,665	4,162	3,409	94	34.7	35.0	34.0	55.0	45.0	10.0		753		122
5 to 10.....	985	519	466		4.5	4.4	4.7	52.7	47.3	5.4		53		111
10 to 15.....	556	287	269		2.5	2.4	2.7	51.6	48.4	2.2		18		106
15 to 20.....	740	340	400		3.4	2.9	4.0	45.9	54.1		8.2	60	85	
20 to 25.....	1,023	506	516	1	4.6	4.2	5.2	49.5	50.5		1.0	10	97	
25 to 30.....	849	446	403		3.8	3.7	4.0	52.5	47.5	5.0		43	110	
30 to 35.....	779	375	404		3.5	3.1	4.0	48.1	51.9		3.8	29	92	
35 to 40.....	754	382	372		3.4	3.2	3.7	50.7	49.3	1.4		10	102	
40 to 45.....	688	348	340		3.1	2.9	3.4	50.6	49.4	1.2		8	102	
45 to 50.....	754	397	357		3.4	3.3	3.6	52.7	47.3	5.4		30	111	
50 to 55.....	785	414	321		3.3	3.5	3.2	56.3	43.7	12.6		93	122	
55 to 60.....	801	460	341		3.6	3.9	3.4	57.4	42.6	14.8		119	124	
60 to 65.....	939	515	424		4.2	4.3	4.2	55.0	45.0	10.0		91	121	
65 to 70.....	1,046	606	439	1	4.7	5.1	4.4	58.0	42.0	16.0		167	138	
70 to 75.....	1,065	614	451		4.8	5.2	4.5	57.6	42.4	15.2		163	136	
75 to 80.....	996	602	394		4.5	5.1	3.9	60.4	39.6	20.8		208	152	
80 to 85.....	780	437	293		3.3	3.7	2.9	59.9	40.1	19.8		144	149	
85 to 90.....	344	177	167		1.6	1.5	1.7	51.4	48.6	2.8		10	105	
90 to 95.....	133	71	62		.6	.6	.6	53.4	46.6	6.8		9	114	
95 to 100.....	33	20	13		.2	.2	.1	66.6	33.3	33.3		7	153	
100 and over.....	8	4	4					50.0	50.0				100	
Unknown ages.....	456	226	153	77	2.1	1.9	1.5	59.6	40.4	19.2		73	147	

* Unknown sex excluded.

Table 48 compares the per cents of deaths at certain periods of age for the past ten years. It appears that the proportions of deaths of children under one year and under five years of age were somewhat less than the average for the period.

TABLE 48.—*Exhibiting the per cents of deaths at different ages for the years 1882-1891, and average for the ten years. (Still-births included.)*

Years.	Under 1 year.	Under 5 years.	20 to 30.	All others.
1882.....	24.4	38.8	8.7	52.5
1883.....	24.8	38.5	9.4	52.4
1884.....	27.2	40.1	9.1	50.9
1885.....	26.1	37.6	8.9	53.4
1886.....	26.2	38.8	8.8	52.4
1887.....	25.4	37.9	8.8	53.2
1888.....	27.5	38.9	8.5	52.5
1889.....	28.0	37.7	8.8	42.9
1890.....	25.2	36.1	8.6	43.9
1891.....	24.7	34.7	8.5	56.8
Average.....	25.8	37.9	8.8	51.1

Table 49 makes a very interesting exhibit of the numbers and per cents of deaths at different periods of age for each month of the year 1891. It would be far more valuable were it not certain that the numbers returned for each month are largely affected by their nearness to the date of collection of the deaths in May, 1892, as already referred to under Tables 44 and 45.

Taking the figures as they are returned, the largest number of deaths for all ages is for the month of December; the smallest number is that for February. Both December and April are markedly higher than the neighboring months, especially for persons aged over 50 years. These months showed a greater number of deaths from influenza than any others. In children under five, and especially in infants less than one year old, the most fatal months were August and September, corresponding to the increased mortality from cholera infantum and diarrheal diseases at that time.

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TABLE 49.--*The relation of the deaths at different periods of age to deaths at all ages, by months; and for the same period of age the relation of the deaths in each month to the deaths in the year 1891.*

Deaths by ages in periods of years.		Year 1891.	Months, 1891.											
		Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	
All ages.....		1,486	1,885	1,774	2,074	1,732	1,580	1,678	2,147	1,973	2,011	1,860	2,351	
Under 1	Number.....	317	351	389	409	346	392	502	724	613	493	392	525	
	Per cent of all ages.....	21.3	25.3	21.4	19.7	20.0	25.1	30.0	33.7	31.1	24.5	21.1	22.3	
	Per cent of deaths, 1891.....	100.0	5.8	6.4	7.0	7.5	6.3	7.2	9.2	13.3	11.2	9.0	7.2	9.6
All under 5	Number.....	476	489	554	610	525	520	670	972	845	680	559	758	
	Per cent of all ages.....	34.7	22.0	35.3	31.2	29.4	33.3	40.0	45.3	42.8	33.3	30.0	32.2	
	Per cent of deaths, 1891.....	100.0	6.2	6.4	7.2	8.0	6.8	6.8	8.7	12.7	11.0	8.9	7.3	9.9
5 to 10	Number.....	90	55	74	73	83	68	61	79	85	100	91	125	
	Per cent of all ages.....	4.6	6.0	4.2	3.5	4.7	4.4	3.6	3.6	4.3	4.8	4.9	5.3	
	Per cent of deaths, 1891.....	100.0	9.1	5.6	7.5	7.4	8.4	6.9	6.2	8.0	8.6	10.2	9.2	12.7
10 to 20	Number.....	96	87	102	113	93	91	93	109	117	124	130	139	
	Per cent of all ages.....	5.9	6.3	5.7	5.4	5.4	5.8	5.5	5.1	5.9	6.1	6.9	5.9	
	Per cent of deaths, 1891.....	100.0	7.3	6.6	7.9	8.7	7.2	7.0	7.2	8.4	9.0	9.6	10.0	10.7
20 to 50	Number.....	300	288	414	464	395	372	347	429	406	476	429	500	
	Per cent of all ages.....	21.9	20.2	23.3	25.2	22.8	23.2	20.6	20.6	20.5	23.7	23.1	21.3	
	Per cent of deaths, 1891.....	100.0	6.2	5.9	8.5	10.0	8.1	7.7	7.2	8.9	8.4	9.9	8.9	10.3
50 and over	Number.....	494	449	596	753	601	475	466	508	478	586	610	794	
	Per cent of all ages.....	30.9	33.2	33.6	36.3	34.7	30.4	27.7	23.7	23.6	24.3	23.3	33.8	
	Per cent of deaths, 1891.....	100.0	7.2	6.6	8.7	11.0	8.8	6.9	6.8	7.4	7.0	8.6	8.9	11.6
Unknown ages.....	Number.....	496	31	17	34	41	35	34	41	50	43	41	35	
	Per cent of all ages.....	2.1	2.1	1.2	1.9	2.3	2.0	2.2	2.4	2.3	2.1	2.2	1.5	
	Per cent of deaths, 1891.....	6.8	3.7	7.5	9.0	7.7	7.5	9.0	10.9	9.2	9.6	9.0	7.7	

a Including 48 deaths in unknown month.

Tables 50 and 51 give the facts in detail in regard to the number of persons of each sex who died at all ages during each month of the year 1891. Table 50 is condensed from Table 51 and states the ages in periods of five years. Table 51 gives the number for each year, and also the number dying at each month of age in children under one year.

TABLE 50.—*Exhibiting, by sex and by age, in periods of years, the number of persons returned, as having died in Michigan during the year 1891.*

Ages in periods of years.	Sex.	Year, 1891.	Months, 1891.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
All ages	Totals	22,079	1486	1385	1774	2074	1732	1560	1678	2147	1973	2011	1860	2351	48
	Males	11,908	813	740	935	1107	927	855	880	1155	1077	1096	1037	1258	28
	Females	9,998	665	637	829	956	792	695	779	967	877	901	807	1075	18
	Unknown	173	8	8	10	11	13	10	19	25	19	14	16	18	2
Under 1	Totals	5,458	317	351	389	409	346	392	502	724	613	492	392	525	6
	Males	2,983	179	181	227	224	179	218	262	387	336	277	228	283	2
	Females	2,387	134	165	156	179	157	169	228	329	269	208	156	234	3
	Unknown	88	4	5	6	6	10	5	12	8	8	7	8	8	1
All under 5	Totals	7,665	476	489	554	610	525	520	670	972	845	680	559	758	7
	Males	4,162	270	248	310	320	270	277	349	527	468	388	320	412	8
	Females	3,409	202	236	237	284	245	237	309	486	369	285	231	335	3
	Unknown	94	4	5	7	6	10	6	12	9	8	7	8	11	1
5 to 10	Totals	985	90	55	74	73	83	68	61	79	85	100	91	125	1
	Males	519	50	22	36	31	48	40	32	43	47	52	49	69	—
	Females	466	40	33	38	42	35	28	29	36	38	48	42	56	1
10 to 15	Totals	556	45	36	45	48	39	39	37	43	52	54	55	62	1
	Males	287	29	23	28	24	26	20	20	22	29	21	23	32	1
	Females	269	16	13	22	24	19	19	17	21	23	33	32	30	—
15 to 20	Totals	740	50	51	57	65	54	52	56	66	65	70	75	77	2
	Males	340	22	25	21	28	26	27	24	38	26	32	33	37	1
	Females	400	28	26	36	37	28	25	32	28	39	38	42	40	1
20 to 25	Totals	1,023	62	59	73	93	73	78	74	105	99	124	94	89	—
	Males	506	30	30	37	48	34	43	34	49	52	70	44	35	—
	Females	516	32	29	36	44	39	35	40	56	47	54	50	54	—
	Unknown	1	—	—	—	1	—	—	—	—	—	—	—	—	—
25 to 30	Totals	849	45	48	72	95	73	62	62	71	72	81	73	94	1
	Males	446	31	28	32	49	40	27	30	30	48	43	43	45	—
	Females	403	14	20	40	46	33	35	32	41	24	38	30	49	1
30 to 35	Totals	779	57	57	77	76	57	58	49	60	69	66	67	85	1
	Males	375	26	33	30	31	28	26	19	33	36	29	37	46	1
	Females	404	31	24	47	45	29	32	30	27	33	37	30	39	—

DEATHS BY MONTHS, SEX AND PERIODS OF AGE.

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TABLE 50.—CONTINUED.—Deaths by periods of age, by sex and by months.

Ages in periods of years.	Sex.	Year, 1891.	Months, 1891.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
35 to 40.....	Totals	754	47	47	74	61	57	64	42	68	53	94	62	84	1
	Males	382	26	23	41	29	30	27	21	33	25	48	35	44	..
	Females	372	21	24	33	32	27	37	21	35	28	46	27	40	1
40 to 45.....	Totals	688	54	29	60	77	66	53	58	61	54	53	61	61	1
	Males	348	26	14	32	44	33	31	29	26	24	31	28	29	1
	Females	340	28	15	28	33	33	22	29	35	30	22	33	32	..
45 to 50.....	Totals	754	35	48	58	82	69	57	62	64	59	58	72	87	3
	Males	397	18	31	21	48	33	35	29	33	32	29	45	43	..
	Females	357	17	17	37	34	36	22	33	31	27	29	27	44	3
50 to 55.....	Totals	735	51	47	64	74	48	43	66	61	58	62	82	78	1
	Males	414	28	22	37	48	21	25	39	34	35	30	44	50	1
	Females	321	23	25	27	26	27	18	27	27	23	32	38	28	..
55 to 60.....	Totals	801	61	57	73	81	80	61	52	59	46	70	72	88	1
	Males	460	32	35	43	42	46	35	32	32	26	41	46	49	1
	Females	341	29	22	30	39	34	26	20	27	20	29	26	39	..
60 to 65.....	Totals	939	75	69	90	97	72	72	65	73	62	85	73	105	1
	Males	515	39	37	47	53	42	41	41	40	40	42	45	47	1
	Females	424	36	32	43	44	30	31	24	33	22	43	28	58	..
65 to 70.....	Totals	1,046	90	82	86	119	106	67	72	64	69	78	101	110	2
	Males	606	59	46	53	71	59	37	41	33	36	52	57	62	..
	Females	439	31	36	33	48	47	30	31	30	33	26	44	48	2
	Unknown	1	..	..	..	..	..	..	..	1	..	..	..	..	..
70 to 75.....	Totals	1,065	73	70	83	112	96	76	60	79	80	104	92	136	4
	Males	614	41	40	42	58	57	48	33	54	45	60	55	78	3
	Females	451	32	30	41	54	39	28	27	25	35	44	37	58	1
75 to 80.....	Totals	996	70	55	79	135	87	75	72	74	60	80	95	110	4
	Males	602	32	38	45	81	56	48	44	51	37	45	54	67	4
	Females	394	38	17	34	54	31	27	28	23	23	35	41	43	..
80 to 85.....	Totals	730	35	39	74	84	67	44	41	53	60	68	59	104	2
	Males	437	23	23	38	55	40	30	23	37	31	42	38	56	1
	Females	293	12	16	36	29	27	14	18	16	29	26	21	48	1
85 to 90.....	Totals	344	23	19	30	40	33	20	26	27	30	26	21	47	2
	Males	177	11	8	17	19	20	12	15	9	12	11	10	32	1
	Females	167	12	11	13	21	13	8	11	18	18	15	11	15	1

TABLE 50.—CONCLUDED.—Deaths by periods of age, by sex, and by months.

Ages in periods of years.	Sex.	Year, 1891.	Months, 1891.											
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
90 to 95.....	Totals	133	13	8	13	8	10	15	8	11	10	14	10	12
	Males	71	5	5	9	4	5	12	3	5	4	8	4	6
	Females	62	8	3	4	4	5	3	5	6	6	6	6	6
95 to 100.....	Totals	33	2	2	4	3	—	1	3	6	3	1	4	4
	Males	20	1	1	1	1	—	1	3	5	1	1	3	2
	Females	13	1	1	3	2	—	—	—	1	2	—	1	2
100 and over.....	Totals	8	1	1	—	—	2	1	1	1	—	—	1	—
	Males	4	—	1	—	—	1	1	—	—	—	—	1	—
	Females	4	1	—	—	—	1	—	1	1	—	—	—	—
Unknown.....	Totals	456	31	17	34	41	35	34	41	50	42	43	41	35
	Males	226	14	7	20	23	18	12	19	21	23	21	23	17
	Females	153	13	7	11	14	14	18	15	14	8	15	10	11
	Unknown	77	4	3	3	4	3	4	7	15	11	7	8	7

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Exhibiting, by sex and by months, the number returned as having died during the year 1891 at each and every age, the age stated in twelfths or those under one year, and in years for those over one year of age.

No.	Sex.	Year, 1891.	Months, 1891.												Unknown.
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
	Totals	2,470	182	184	215	228	203	196	189	226	192	192	201	203	1
	Males	1,372	107	100	129	130	107	120	105	121	101	108	121	123	
	Females	1,013	71	80	80	102	85	71	72	97	84	77	73	121	
	Unknown	88	4	4	6	6	10	5	12	8	7	7	7	8	1
	Totals	445	22	34	28	30	22	28	39	45	77	44	29	37	1
	Males	280	11	15	12	21	11	10	20	22	46	26	14	20	1
	Females	214	11	18	16	18	11	18	19	22	21	18	15	17	
	Unknown	1		1											
	Totals	422	19	19	26	29	29	36	39	68	63	39	29	26	
	Males	237	13	8	15	18	11	22	22	28	28	24	19	19	
	Females	185	6	11	11	11	18	14	17	40	25	15	10	7	
	Totals	368	14	21	16	26	18	23	45	60	50	41	23	26	
	Males	174	9	11	7	13	6	13	16	32	19	23	10	15	
	Females	189	5	10	9	13	12	10	29	28	21	18	13	11	
	Totals	302	12	11	11	14	9	21	34	78	37	24	22	27	1
	Males	167	4	9	9	7	6	8	22	43	20	13	13	14	
	Females	135	8	2	2	7	3	13	12	25	17	12	9	13	1
	Totals	274	11	11	20	9	8	20	29	58	31	40	16	21	
	Males	159	5	6	12	6	6	12	13	36	20	22	8	13	
	Females	114	6	5	8	3	2	8	16	22	10	18	8	8	
	Unknown	1									1				
	Totals	277	10	11	15	12	15	15	23	51	44	34	17	29	1
	Males	150	2	2	9	7	10	6	11	31	27	17	11	16	1
	Females	126	8	9	6	5	5	9	12	20	17	17	5	13	
	Unknown	1											1		
	Totals	216	9	18	8	9	10	14	23	31	36	25	10	22	1
	Males	117	6	12	7	5	5	6	9	18	19	14	8	8	
	Females	99	3	6	1	4	5	8	14	13	17	11	2	14	1
	Totals	200	11	10	16	10	10	12	23	32	24	18	15	18	1
	Males	112	7	5	9	8	5	6	14	15	15	9	9	10	
	Females	88	4	5	7	2	5	6	9	17	9	9	6	8	1

TABLE 51.—CONTINUED.—Deaths by ages, by sex, by months.

Ages in years.	Sex.	Year, 1891.	Months, 1891.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
9-12	Totals	181	11	11	13	13	7	12	26	25	18	16	15	14	...
	Males	95	5	6	6	8	3	7	15	12	10	9	8	6	...
	Females	86	6	5	7	5	4	5	11	13	8	7	7	8	...
10-12	Totals	145	7	11	8	12	6	9	13	21	16	12	8	22	...
	Males	76	4	4	5	5	3	2	6	11	8	7	4	17	...
	Females	69	3	7	3	7	3	7	7	10	8	5	4	5	...
11-12	Totals	163	9	10	12	8	10	6	19	29	25	7	7	21	...
	Males	94	6	8	7	6	6	6	9	17	13	6	3	12	...
	Females	69	3	7	5	2	4	...	10	12	12	1	4	9	...
1	Totals	1,045	70	56	77	99	96	50	85	143	129	90	68	82	...
	Males	553	38	25	40	50	48	23	45	78	72	54	36	44	...
	Females	487	32	31	37	49	48	26	40	64	57	36	32	35	...
	Unknown	5	...	...	...	...	...	1	...	1	...	...	...	3	...
2	Totals	508	40	44	36	49	37	25	37	63	42	38	34	63	...
	Males	266	24	23	17	18	19	11	20	37	23	20	21	33	...
	Females	242	16	21	19	31	18	14	17	26	19	18	13	30	...
3	Totals	365	30	18	28	27	27	30	24	25	38	35	31	51	1
	Males	194	18	12	13	15	15	10	10	15	23	19	15	28	1
	Females	170	12	6	14	12	12	20	14	10	15	16	16	23	...
	Unknown	1	...	...	1	...	...	...	...	...	...	...	...	...	...
4	Totals	289	19	20	24	26	19	23	22	17	23	25	34	37	...
	Males	166	11	7	13	13	9	15	12	10	14	13	20	24	...
	Females	123	8	13	11	13	10	8	10	7	9	7	14	13	...
5	Totals	271	31	11	13	19	25	13	17	18	23	30	35	36	...
	Males	143	15	5	7	8	13	10	11	11	15	14	19	15	...
	Females	128	16	6	6	11	12	3	6	7	8	16	16	21	...
6	Totals	204	15	13	23	18	14	17	21	18	10	19	14	21	1
	Males	105	6	6	12	6	8	11	11	8	4	12	6	15	...
	Females	99	9	7	11	12	6	6	10	10	6	7	8	6	1
7	Totals	180	13	12	14	11	15	17	10	22	12	19	13	22	...
	Males	92	7	6	7	6	12	8	4	13	4	6	7	12	...
	Females	88	6	6	7	5	3	9	6	9	8	13	6	10	...
8	Totals	184	15	9	13	12	18	11	7	12	19	20	21	27	...
	Males	107	12	3	5	6	11	8	4	6	10	13	13	16	...
	Females	77	3	6	8	6	7	3	3	6	9	7	8	11	...

DEATHS BY MONTHS, SEX AND SEPARATE AGES.

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TABLE 51.—CONTINUED.—Deaths by ages, by sex, by months.

Ages in years.	Sex.	Year, 1891.	Months, 1891.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
9	Totals	146	16	10	11	13	11	10	6	9	21	12	8	19	
	Males	72	10	2	5	5	4	3	2	5	14	7	4	11	
	Females	74	6	8	6	8	7	7	4	4	7	5	4	8	
10	Totals	125	13	12	8	12	6	9	9	10	8	14	12	12	
	Males	74	11	6	5	7	2	6	7	5	4	6	7	8	
	Females	51	2	6	3	5	4	3	2	5	4	8	5	4	
11	Totals	99	9	6	6	7	7	6	5	10	13	11	7	12	
	Males	55	3	2	5	3	5	2	2	6	11	4	3	9	
	Females	44	6	4	1	4	2	4	3	4	2	7	4	3	
12	Totals	101	4	6	5	10	5	9	6	6	9	12	12	17	
	Males	46	2	5	3	4	4	4	3	3	3	4	2	9	
	Females	55	2	1	2	6	1	5	3	3	6	8	10	8	
13	Totals	118	10	5	14	10	10	8	8	5	14	6	16	12	
	Males	55	5	4	7	5	3	4	5	2	6	2	7	5	
	Females	63	5	1	7	5	7	4	3	3	8	4	9	7	
14	Totals	113	9	7	12	9	11	7	9	12	8	11	8	9	
	Males	57	8	6	3	5	6	4	3	6	5	5	4	1	
	Females	56	1	1	9	4	5	3	6	6	3	6	4	8	
15	Totals	130	8	7	9	9	6	11	12	11	13	11	16	16	
	Males	60	5	4	1	2	4	4	8	5	5	6	7	8	
	Females	70	3	3	8	7	2	7	4	6	8	5	9	8	
16	Totals	128	9	10	11	12	14	9	5	11	12	11	11	13	
	Males	57	5	3	5	4	6	8	1	10	5	5	2	3	
	Females	71	4	7	6	8	8	1	4	1	7	6	9	10	
17	Totals	127	8	7	7	17	5	9	9	18	11	14	11	11	
	Males	56	1	4	5	7	3	6	4	10	3	4	4	5	
	Females	71	7	3	2	10	2	3	5	8	8	10	7	6	
18	Totals	162	8	14	15	13	13	12	10	12	15	15	15	20	
	Males	75	3	5	5	9	6	4	3	5	6	10	8	11	
	Females	87	5	9	10	4	7	8	7	7	9	5	7	9	
19	Totals	198	17	13	15	14	16	11	20	14	14	19	22	17	
	Males	92	8	9	5	6	7	5	8	8	7	7	12	10	
	Females	101	9	4	10	8	9	6	12	6	7	12	10	7	
20	Totals	178	8	10	11	19	16	13	17	23	11	19	12	19	
	Males	76	4	4	3	8	7	5	5	12	7	11	5	5	
	Females	101	4	6	8	10	9	8	12	11	4	8	7	14	
	Unknown	1				1									

VITAL STATISTICS OF MICHIGAN, 1891.

TABLE 51.—CONTINUED.—Deaths by ages, by sex, by months.

Ages in years.	Sex.	Year. 1891.	Months, 1891.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
21.....	Totals	204	15	14	16	18	14	19	11	17	23	23	17	18	---
	Males	110	8	11	5	8	8	14	6	9	14	13	9	5	---
	Females	94	7	3	11	10	6	5	5	8	9	9	8	13	---
22.....	Totals	214	14	10	16	20	9	16	12	19	23	23	23	19	---
	Males	116	6	4	13	14	7	10	6	7	13	16	10	10	---
	Females	98	8	6	3	6	2	6	6	12	10	17	13	9	---
23.....	Totals	219	14	12	10	21	17	13	22	27	23	19	29	12	---
	Males	102	8	5	5	11	4	5	10	10	11	13	13	7	---
	Females	117	6	7	5	10	13	8	12	17	12	6	16	5	---
24.....	Totals	208	11	13	20	15	17	17	12	19	19	21	13	21	---
	Males	102	4	6	11	7	8	9	7	11	7	17	7	8	---
	Females	106	7	7	9	8	9	8	5	8	12	14	6	13	---
25.....	Totals	174	10	14	15	22	21	11	11	19	12	15	8	16	---
	Males	100	6	11	8	9	13	5	6	10	8	9	6	9	---
	Females	74	4	3	7	13	8	6	5	9	4	6	2	7	---
26.....	Totals	172	11	7	17	21	12	11	14	15	12	15	17	20	---
	Males	84	6	5	6	10	8	4	8	8	9	7	5	8	---
	Females	88	5	2	11	11	4	7	6	7	3	8	12	12	---
27.....	Totals	154	6	3	13	17	13	21	11	8	14	12	16	19	1
	Males	71	6	---	4	8	6	7	5	---	9	6	10	10	---
	Females	83	---	3	9	9	7	14	6	8	5	6	6	9	1
28.....	Totals	182	6	11	10	23	15	9	17	17	27	21	19	17	---
	Males	99	4	5	3	14	5	4	7	7	16	12	14	8	---
	Females	83	2	6	7	9	10	5	10	10	11	9	5	9	---
29.....	Totals	157	12	13	17	12	12	10	9	12	7	18	13	22	---
	Males	92	9	7	11	8	8	7	4	5	6	9	8	10	---
	Females	65	3	6	6	4	4	3	5	7	1	9	5	12	---
30.....	Totals	175	17	14	12	14	11	8	9	19	14	14	15	28	---
	Males	89	9	8	6	7	5	2	3	10	6	8	8	17	---
	Females	86	8	6	6	7	6	6	6	9	8	6	7	11	---
31.....	Totals	135	10	11	16	8	13	9	8	7	14	16	10	13	---
	Males	67	4	7	6	4	6	6	3	3	10	6	5	7	---
	Females	68	6	4	10	4	7	3	5	4	4	10	5	6	---
32.....	Totals	179	7	9	25	21	15	16	12	16	14	11	15	17	1
	Males	91	3	4	8	7	9	8	6	11	8	5	10	11	1
	Females	88	4	5	17	14	6	8	6	5	6	6	5	6	---

DEATHS BY MONTHS, SEX AND SEPARATE AGES.

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TABLE 51.—CONTINUED.—Deaths by age, by sex, by months.

Ages in years.	Sex.	Year, 1891.	Months, 1891.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
33	Totals	151	16	12	15	13	6	14	11	11	16	13	12	12	---
	Males	62	7	7	8	6	4	3	3	4	6	5	5	4	---
	Females	89	9	5	7	7	2	11	8	7	10	8	7	8	---
34	Totals	139	7	11	9	20	12	11	9	7	11	12	15	15	---
	Males	66	3	7	2	7	4	7	4	5	6	5	9	7	---
	Females	73	4	4	7	13	8	4	5	2	5	7	6	8	---
35	Totals	150	5	8	18	7	22	13	10	12	8	13	13	20	1
	Males	77	4	5	9	3	13	5	6	2	3	9	9	9	---
	Females	73	1	3	9	4	9	8	4	10	5	4	4	11	1
36	Totals	149	6	12	16	11	11	10	8	14	10	20	18	13	---
	Males	69	3	6	5	2	6	3	2	8	5	10	10	9	---
	Females	80	3	6	11	9	5	7	6	6	5	10	8	4	---
37	Totals	181	10	7	10	11	6	17	9	10	12	17	9	13	---
	Males	71	3	3	8	6	3	7	5	5	6	12	5	8	---
	Females	60	7	4	2	5	3	10	4	5	6	5	4	5	---
38	Totals	182	13	11	16	18	14	16	6	20	11	26	8	23	---
	Males	83	7	3	10	9	5	9	3	10	6	7	3	11	---
	Females	99	6	8	6	9	9	7	3	10	5	19	5	12	---
39	Totals	142	13	9	14	14	4	8	9	12	12	18	14	15	---
	Males	82	9	6	9	9	3	3	5	8	5	10	8	7	---
	Females	60	4	3	5	5	1	5	4	4	7	8	6	8	---
40	Totals	158	9	7	8	21	13	10	11	17	13	13	12	23	1
	Males	81	6	3	3	8	6	7	10	9	4	7	5	12	1
	Females	77	3	4	5	13	7	3	1	8	9	6	7	11	---
41	Totals	104	7	8	9	14	8	10	13	7	9	12	6	1	---
	Males	60	3	2	5	10	6	7	6	4	6	9	2	---	---
	Females	44	4	6	4	4	2	3	7	3	3	3	4	1	---
42	Totals	167	21	7	15	14	16	11	13	13	12	11	18	16	---
	Males	84	11	4	9	8	8	5	7	4	5	7	8	8	---
	Females	83	10	3	6	6	8	6	6	9	7	4	10	8	---
43	Totals	136	10	6	12	11	18	15	13	12	11	8	12	8	---
	Males	64	3	4	6	9	7	8	4	5	7	---	6	5	---
	Females	72	7	2	6	2	11	7	9	7	4	8	6	3	---
44	Totals	123	7	1	16	17	11	7	8	12	9	9	13	13	---
	Males	59	3	1	9	9	6	4	2	4	2	8	7	4	---
	Females	64	4	---	7	8	5	3	6	8	7	1	6	9	---

VITAL STATISTICS OF MICHIGAN, 1891.

TABLE 51.—CONTINUED.—Deaths by age, by sex, by months.

Ages in years.	Sex.	Year, 1891.	Months, 1891.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
45	Totals	183	5	14	16	27	11	14	7	16	9	20	24	20	---
	Males	103	4	8	6	20	4	8	2	10	5	12	18	6	---
	Females	80	1	6	10	7	7	6	5	6	4	8	6	14	---
46	Totals	132	10	8	11	11	12	10	12	11	7	16	10	12	2
	Males	61	5	4	3	4	4	6	4	7	3	9	3	9	---
	Females	71	5	4	8	7	8	4	8	4	4	7	7	3	2
47	Totals	148	4	13	10	11	22	13	14	7	14	6	12	22	---
	Males	77	2	10	3	5	13	6	7	3	7	3	7	11	---
	Females	71	2	3	7	6	9	7	7	4	7	3	5	11	---
48	Totals	159	11	4	13	16	11	10	16	19	14	10	14	20	1
	Males	87	5	3	3	9	9	8	10	7	8	3	11	11	---
	Females	72	6	1	10	7	2	2	6	12	6	7	3	9	1
49	Totals	132	5	9	8	17	13	10	13	11	15	6	12	13	---
	Males	69	2	6	6	10	3	7	6	6	9	2	6	6	---
	Females	63	3	3	2	7	10	3	7	5	6	4	6	7	---
50	Totals	177	7	13	15	17	12	10	21	19	11	10	17	24	1
	Males	102	5	7	11	9	5	5	14	10	6	4	8	17	1
	Females	75	2	6	4	8	7	5	7	9	5	6	9	7	---
51	Totals	124	12	7	6	10	8	7	13	7	10	13	19	12	---
	Males	78	6	4	3	5	5	7	7	4	7	8	12	10	---
	Females	46	6	3	3	5	3	---	6	3	3	5	7	2	---
52	Totals	165	12	10	15	19	9	9	18	9	13	16	20	15	---
	Males	94	8	3	7	16	2	4	10	6	11	7	11	9	---
	Females	71	4	7	8	3	7	5	8	3	2	9	9	6	---
53	Totals	121	8	9	15	12	11	5	6	8	8	12	11	16	---
	Males	61	2	5	6	9	5	2	2	4	5	6	6	9	---
	Females	60	6	4	9	3	6	3	4	4	3	6	5	7	---
54	Totals	148	12	8	13	16	8	12	8	18	16	11	15	11	---
	Males	79	7	3	10	9	4	7	6	10	6	5	7	5	---
	Females	69	5	5	3	7	4	5	2	8	10	6	8	6	---
55	Totals	151	12	9	15	15	25	11	10	11	4	19	8	12	---
	Males	97	6	8	12	6	15	8	8	6	3	12	5	8	---
	Females	54	6	1	3	9	10	3	2	5	1	7	3	4	---
56	Totals	169	17	14	17	15	17	20	8	10	11	15	13	12	---
	Males	90	7	9	11	6	10	14	2	5	7	7	8	4	---
	Females	79	10	5	6	9	7	6	6	5	4	8	5	8	---

DEATHS BY MONTHS, SEX AND SEPARATE AGES.

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TABLE 51.—CONTINUED.—Deaths by age, by sex, by months.

Ages in years.	Sex.	Year, 1891.	Months, 1891.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
57	Totals	156	6	13	11	17	10	7	11	16	8	17	17	23	1
	Males	90	5	6	6	9	5	3	9	11	4	11	8	12	1
	Females	66	1	7	5	8	5	4	2	5	4	6	9	10	---
58	Totals	181	17	10	18	23	16	14	10	11	11	10	21	21	---
	Males	109	10	8	8	16	9	8	6	5	5	6	16	12	---
	Females	72	7	2	10	6	7	6	4	6	6	4	5	9	---
59	Totals	144	9	11	12	12	12	9	13	11	12	9	13	21	---
	Males	74	4	4	6	5	7	2	7	5	7	5	9	13	---
	Females	70	5	7	6	7	5	7	6	6	5	4	4	8	---
60	Totals	206	21	20	17	20	18	14	17	12	11	14	13	25	1
	Males	102	13	7	5	10	10	8	11	6	7	5	8	11	1
	Females	101	8	13	12	10	8	6	6	6	4	9	5	14	---
61	Totals	153	10	8	17	13	15	12	7	16	11	17	11	16	---
	Males	76	5	6	6	5	6	6	4	6	6	12	6	8	---
	Females	77	5	2	11	8	9	6	3	10	5	5	5	8	---
62	Totals	208	17	9	20	20	16	20	16	16	13	18	14	29	---
	Males	131	7	6	12	16	13	13	12	10	9	9	10	14	---
	Females	77	10	3	8	4	3	7	4	6	4	9	4	15	---
63	Totals	197	16	15	17	22	11	13	17	19	12	21	17	17	---
	Males	116	8	8	12	11	9	7	9	13	11	10	12	6	---
	Females	81	8	7	5	11	2	6	8	6	1	11	5	11	---
64	Totals	178	11	17	19	22	12	13	8	10	15	15	18	18	---
	Males	90	6	10	12	11	4	7	5	5	7	6	9	8	---
	Females	88	5	7	7	11	8	6	3	5	8	9	9	10	---
65	Totals	241	18	13	21	21	23	19	14	13	15	17	23	29	---
	Males	143	12	10	16	11	17	10	10	7	6	9	17	13	---
	Females	97	6	3	5	10	11	9	4	5	9	8	11	11	---
	Unknown	1	---	---	---	---	---	---	---	1	---	---	---	---	---
66	Totals	184	19	16	24	17	20	11	10	11	17	10	10	19	---
	Males	110	13	7	16	11	10	5	5	7	10	7	6	13	---
	Females	74	6	9	8	6	10	6	5	4	7	3	4	6	---
67	Totals	208	16	15	13	34	23	12	11	14	12	15	19	23	1
	Males	116	11	9	5	20	11	9	5	7	8	9	11	11	---
	Females	92	5	6	8	14	12	3	6	7	4	6	8	12	1
68	Totals	215	15	13	13	23	17	13	21	11	19	13	24	23	1
	Males	124	12	8	9	17	10	7	11	4	10	12	13	11	---
	Females	91	3	5	4	11	7	6	10	7	9	6	11	11	1

TABLE 51.—CONTINUED.—Deaths by age, by sex, by months.

Ages in years.	Sex.	Year, 1891.	Months, 1891.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
69.....	Totals	198	22	20	15	19	18	12	16	15	6	18	20	17	---
	Males	113	11	12	7	12	11	6	10	8	2	15	10	9	---
	Females	85	11	8	8	7	7	6	6	7	4	3	10	8	---
70.....	Totals	204	16	13	17	23	23	17	9	14	12	17	21	22	---
	Males	123	9	9	10	8	14	13	4	12	8	12	13	11	---
	Females	81	7	4	7	15	9	4	5	2	4	5	8	11	---
71.....	Totals	186	8	11	17	22	24	11	12	13	15	17	12	21	---
	Males	106	4	7	8	15	11	7	5	9	9	10	6	15	---
	Females	80	4	4	9	7	13	4	7	4	9	7	6	6	---
72.....	Totals	247	20	14	21	26	19	13	20	17	20	28	22	23	4
	Males	131	9	3	12	13	13	4	12	8	10	17	13	14	3
	Females	116	11	11	9	13	6	9	8	9	10	11	9	9	1
73.....	Totals	222	15	20	17	21	14	16	12	18	13	20	17	39	---
	Males	125	9	14	8	12	7	11	7	13	8	7	9	20	---
	Females	97	6	6	9	9	7	5	5	5	5	13	8	19	---
74.....	Totals	206	14	12	11	20	16	19	7	17	17	22	20	31	---
	Males	129	10	7	4	10	12	13	5	12	10	14	14	15	---
	Females	77	4	5	7	10	4	6	2	5	7	8	6	13	---
75.....	Totals	218	19	15	13	34	16	17	18	20	10	17	18	20	1
	Males	139	10	8	8	22	12	11	10	15	7	8	11	16	1
	Females	79	9	7	5	12	4	6	8	5	3	9	7	4	---
76.....	Totals	215	13	10	20	32	18	19	14	10	14	15	22	27	1
	Males	129	5	8	10	17	11	13	8	9	9	10	11	17	1
	Females	86	8	2	10	15	7	6	6	1	5	5	11	10	---
77.....	Totals	185	14	7	10	20	18	18	16	15	14	14	17	21	1
	Males	109	6	4	3	9	11	11	12	9	8	9	13	13	1
	Females	76	8	3	7	11	7	7	4	6	6	5	4	8	---
78.....	Totals	181	13	7	21	22	19	9	9	13	14	12	26	15	1
	Males	111	7	6	14	16	14	6	2	10	9	8	13	5	1
	Females	70	6	1	7	6	5	3	7	3	5	4	13	10	---
79.....	Totals	197	11	16	15	27	16	12	15	16	8	22	12	27	---
	Males	114	4	12	10	17	8	7	12	8	4	10	6	16	---
	Females	83	7	4	5	10	8	5	3	8	4	12	6	11	---
80.....	Totals	172	9	8	13	25	16	11	5	11	12	9	19	29	---
	Males	106	7	5	14	13	7	8	3	7	6	6	13	17	---
	Females	66	2	3	4	12	9	3	2	4	6	3	-	12	---

TABLE 51.—CONTINUED.—Deaths by age, by sex, by months.

Ages in years.	Sex.	Year, 1891.	Months, 1891.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
81	Totals	144	6	8	16	12	12	7	8	11	20	14	12	18	---
	Males	94	4	3	8	9	10	6	4	9	14	11	10	6	---
	Females	50	2	5	8	3	2	1	4	2	6	3	2	12	---
82	Totals	169	4	10	12	22	16	12	10	18	12	19	13	21	---
	Males	88	2	4	4	17	7	7	5	13	3	7	7	12	---
	Females	81	2	6	8	5	9	5	5	5	9	12	6	9	---
83	Totals	125	7	9	17	7	14	8	7	7	9	13	7	20	---
	Males	78	5	8	6	4	11	4	6	6	6	8	4	10	---
	Females	47	2	1	11	3	3	4	1	1	3	5	3	10	---
84	Totals	120	9	4	11	18	9	6	11	6	7	13	8	16	2
	Males	71	5	3	6	12	5	5	5	2	2	10	4	11	1
	Females	49	4	1	5	6	4	1	6	4	5	3	4	5	1
85	Totals	82	5	2	11	9	5	3	4	5	9	9	8	11	1
	Males	39	1	1	6	2	1	1	4	1	4	3	6	8	1
	Females	43	4	1	5	7	4	2	---	4	5	6	2	3	---
86	Totals	74	5	4	4	8	9	4	6	5	8	4	4	12	1
	Males	44	2	1	2	5	7	3	5	2	5	3	1	8	---
	Females	30	3	3	2	3	2	1	1	3	3	1	3	4	1
87	Totals	79	6	8	7	7	7	8	6	3	8	7	5	7	---
	Males	41	3	5	5	5	4	4	2	---	3	1	2	7	---
	Females	38	3	3	2	2	3	4	4	3	5	6	3	---	---
88	Totals	58	5	3	4	9	6	3	5	4	2	3	2	12	---
	Males	23	4	---	3	2	4	3	1	---	---	2	1	8	---
	Females	30	1	3	1	7	2	---	4	4	2	1	1	4	---
89	Totals	51	2	2	4	7	6	2	5	10	3	3	2	5	---
	Males	25	1	1	1	5	4	1	3	6	---	2	---	1	---
	Females	26	1	1	3	2	2	1	2	4	3	1	2	4	---
90	Totals	40	4	3	2	1	5	5	4	4	1	6	4	1	---
	Males	19	2	1	1	---	3	3	2	1	---	3	2	1	---
	Females	21	2	2	1	1	2	2	2	3	1	3	2	---	---
91	Totals	41	5	1	5	1	3	4	---	3	4	6	3	6	---
	Males	23	2	1	4	---	1	4	---	1	1	4	2	3	---
	Females	18	3	---	1	1	2	---	---	2	3	2	1	3	---
92	Totals	26	1	1	5	4	1	3	2	3	2	1	1	1	1
	Males	13	---	---	3	2	---	2	1	2	2	---	---	---	1
	Females	13	1	1	2	2	1	1	1	1	---	1	1	1	---

TABLE 51.—CONCLUDED.—Deaths by age, by sex, by months.

Ages in years.	Sex.	Year, 1891.	Months, 1891.												
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
93	Totals	11	2	1	1	1	1	1	2	1	1	1	2		
	Males	7	1	1	1	1	1	1	1	1	1	1	1		
	Females	4	1								1		1	1	
94	Totals	15	1	2	1	1	1	2	2	1	1	1	2		
	Males	9		2	1	1	1	2		1			1		
	Females	6	1						2		1		1	1	
95	Totals	13			4				1	2	2	1	2	1	
	Males	9			1				1	2	1	1	2	1	
	Females	4			3						1				
96	Totals	9		2						2			2	3	
	Males	4		1						1			1	1	
	Females	5		1						1			1	2	
97	Totals	6	2					1	2		1				
	Males	4	1					1	2						
	Females	2	1								1				
98	Totals	2				1				1					
	Males	1								1					
	Females	1				1									
99	Totals	3				2				1					
	Males	2				1				1					
	Females	1				1									
100 and over	Totals	8	1	1			2	1	1	1			1		
	Males	4		1			1	1					1		
	Females	4	1				1		1	1					
Unknown	Totals	456	31	17	34	41	35	34	41	50	42	43	41	35	12
	Males	226	14	7	20	23	18	12	19	21	23	21	23	17	8
	Females	153	13	7	11	14	14	18	15	14	8	15	10	11	3
	Unknown	77	4	3	3	4	3	4	7	15	11	7	8	7	1

From Table 51 the statements concerning the average ages at death of each sex, which are given in Table 52, are derived. To allow for the omission of the months in excess of whole years and for the days in excess of whole months in children aged less than one year, one-half year and one-half month respectively are added to the aggregate for each individual of these classes, and the resulting total being divided by the total number of individuals, less those of unknown age, the average age stated in the table is obtained.*

It is impossible to make any comparisons between the figures presented for 1891 and the averages given for 1889, 1890, as the results stated for these years appear to involve contradictions in themselves, the average ages given for the total deaths of both sexes being either greater or less than the average ages of either the males or females.† The ten-year average for 1881-90 is unsatisfactory for this reason.

The difference between the average ages at death of native-born and foreign-born inhabitants comes largely from the fact that children born of foreign parents are classed among the natives and that the death-rate among children is much higher than among adults.

TABLE 52.—*By nativity, the average age of decedents in Michigan in 1891, compared with 1889-90 and with the mean of the average ages for the ten-year period, 1881-90.*

Nativity of decedents.	Average age at death, 1889.			Average age at death, 1890.			Average age at death, 1891.			Mean of average ages, 1881-90.		
	Totals.	Males.	Females.	Totals.	Males.	Females.	Totals.	Males.	Females.	Totals.	Males.	Females.
All nativities.....	28.6	30.4	29.4	28.6	30.5	29.4	30.3	31.6	30.1	27.4	28.3	27.2
Native-born.....	25.2	23.3	22.1	24.8	23.4	23.2	24.0	23.9	24.1	21.8	21.5	21.4
Foreign-born.....	50.9	49.9	55.0	49.9	50.0	48.4	53.5	54.8	51.3	48.9	49.3	48.4

INFANT MORTALITY.

The tables from No. 53 to 57 are designed to exhibit some important facts in regard to a very numerous class of deaths—those of infants dying before the conclusion of the first year of life. By referring to Table 48 it will be seen that such deaths amounted to somewhat more than one-quarter of the total number of deaths at all ages for the twelve years from 1880 to 1891. It should be remembered, however, in this connection that a large number of still-births are included in the list of children dying under one year of age. In Table 53 the average per cent of still-births to total deaths is stated as 5.3 for the ten years, 1881-1890. The average per cent of deaths under one year to total deaths for the same time is 25.7. Deducting the number of still-births from total deaths and also from deaths under one year of age, it appears that the deaths of children born alive but dying before the end of their first year of life, constitute 21.7 per cent of all deaths (still-births excluded) for the ten-year period, 1881-90.

This indicates sufficiently the necessity of careful study of the conditions and causes influencing such deaths. Their distribution through the year and their relation to the total number of children born in this and the preceding year, from whose numbers

* See Fourth Annual Michigan Registration Report, 1872, p. 360.

† Report for 1889, p. 232; for 1890, p. 227.

these deaths are taken, can only be studied in this place. The diseases principally causing infantile mortality are discussed in the following section of the report.

Table 53 shows the proportion of still-births to all deaths for several recent years. The per cent for 1891 is somewhat below the average while that of the preceding year is high above it. Still-births are returned by the enumerators in their lists of births as well as of deaths and it requires careful comparison of both sets of returns to insure that all still-births shall be compiled properly both as births and deaths, and, at the same time, none be duplicated.

TABLE 53.—*The relation of still-births to all deaths as returned for the years 1889-1891, and the average for ten years 1881-1890. Corrected by means of the returns of births.*

	Total deaths and still-births.			
	1889.	1890.	1891.	Av. for 10 years, 1881-1890.
All deaths.....	20,815	21,642	22,079	18,868
Number of still-births.....	1,202	1,397	1,090	1,005
Per cent of still-births to total deaths.....	5.9	6.5	4.9	5.3

Table 54 appears, at first sight, to be very intricate and complicated in its arrangement, and the question very naturally arises whether the facts shown by it could not be put in some simpler and more easily understood form. The central, or body part of the table, is quite simple in principle, and, when understood, the use of the remainder, which consists entirely of footings for special purposes, easily follows.

The following groups of statements are made in this table:

1. *The number of children, of each sex, who died during each month of the year 1891, arranged according to their ages at death in months.* This portion of the table is identical with the first part of Table 51 for the ages from under one month to eleven months. The footings showing the total number of deaths for each month of 1891 of children under one year of age are at the extreme right of the table in the column headed "Deaths by months—all aged under one year." The greatest mortality was for the month of August in which occurred 716 deaths; the least for January or only 313. The numbers given for the latter months of the year are larger than those for the earlier months on account of being more accurately recorded, apart from any actual differences in mortality between the different months.

2. *The months of birth in 1890 and 1891 of children dying at each age, in months, during each month of the year 1891.* Here the diagonal footings came into use, for convenience in making which the heavy diagonal line and the plan of printing alternate diagonal lines in different styles of type are employed.

(a.) *The numbers on the left of the diagonal line represent children dying at each age in months, and during each month of the year 1891, who were born in that year, 1891.*

(b.) *The numbers on the right of the diagonal line represent children dying at each age in months, and during each month of the year 1891, who were born in the previous year, 1890.*

This will be readily seen by taking an example. The upper left hand space of the body of the table contains the numbers 107, 71, which affirm that 107 males and 71 females died during the month of January, 1891, aged less than one month. "This being the first month of the year of death, it will be seen by a little reflection, that all who died during the month of January under one month of age, were also born during the same month,* being the first month of the year of death, 1891; while those who died at *one month* of age, 11 males and 11 females, were born in December, the last month of the previous year, 1890."

"Hence there is drawn a short perpendicular line between those *under* one month of age, and those *at* one month of age, thus separating those who were born during the year of death from those who were born during the previous year."

"Take again the month of February; it will readily be seen that those dying at one month of age were born in January, the *first* month of the year of death, while those dying at two months of age, were born in December, the *last* month of the previous year. Here the short perpendicular line is drawn between those at *one* month of age and those at *two* months of age, thus separating, as for the month of January, those who were born during the year of death, from those who were born during the previous year. These short perpendicular lines connected by short horizontal lines make up the heavy angling line which runs diagonally through the entire table, separating, for all the months of the year of death, those who were born during the year of death from those who were born during the previous year."

(c.) "*One other valuable exhibit in the table is the month of birth of all those who died during each month of the year.* As has already been shown, the heavy angling line separates children born in the year of death from those born in the previous year. This being true, it may be seen at a glance that the first diagonal column of figures at the left of the angling line would represent the births for the month of January, the first month of the year of death; the second column would represent the births for the month of February, the second month of the year of death; the third, for the month of March, the third month of the year of death, and so on *through the current year*. The first diagonal column of figures at the right of the angling line would represent the births for the month of December; the second column at the right, the births for November; the third, those for October and so back *through the previous year*. It will be seen that the diagonal columns representing the months of birth on the left of the angling line, running upward, terminate opposite their respective months. This is not accidental but in harmony with an invariable rule; for, having given the month of death and the age in months, to find the month of birth, we necessarily count backward as many months as the child is months old. For instance: a child dying in February at one month of age, was born in January, one month previous; a child dying in March at two months of age, was born in January, two months previous. A child dying in April at three months of age, was born in January, three months previous, etc. The diagonal columns at the right of the angling line, running downward, representing births, also terminate opposite their respective months, the first opposite the month of December, the second opposite the month of November, the third opposite the month of October, etc."

* This statement, made in previous Reports, is hardly true. As example, a child may be born December 20, 1890, and die January 15, 1891; much seems to be taken for granted at this point for which there is no logical basis.

"In footing the diagonal columns, those on the left of the angling line are footed toward the top, the results being placed opposite the months; those on the right of the angling line are footed downward, these results also being placed opposite the months." The figures constituting these lines are printed alternately in light and heavy-faced type, making it easy to follow their extensions to the proper square where the footings are given, and which indicate, following the horizontal lines back to the list of months on the left of the table, *the months of birth*.

(d.) The extensions in the two columns on the right, whose sum is given in the third and last column of the table, are made with reference to the diagonal line. The first of these is the summation of the squares on the left of the line and shows the number of deaths in each month of 1891 of children born in the same year. The second column is the extension of the squares on the right of the diagonal line and gives the numbers of deaths in 1891 of children under one year of age, who were born in 1890.

(e.) In like manner the footings in the three series at the base of the table show the number of children dying at each age under one year, and whether born in the year of death, 1891, or in the previous year, 1890. The footings for the first series include all squares below the line; for the second, all squares above the line are brought down.

Table 55 is formed by combining the evidence presented in the preceding table in regard to the months of death of children born in 1890 who died under one year of age in 1891 with the statements made in the corresponding table of the Report for the preceding year in regard to the months of death in 1890 of children born in that year. It is evident that the combination of the two years gives the total number of deaths under one year of children born in 1890.

In the table the deaths in 1890 and 1891 are placed opposite the months of birth in 1890, and a statement of the total number of births, by sex, for each month of 1890 is presented in order that the ratio of deaths under one year of age to the total number of births may be noted for each month of the year. It has been shown that the mortality of children under one year of age is larger than that for any other period of life. A child who escapes the dangers incident to the first year of existence has a greatly increased chance of survival to adult years. Comparison of the months of the year with reference to the probability of survival of children born in them, may be made by this table, as also may be studied the influence of sex. The deficiency in the enumeration of certain months, as also the fact that a large number of still-births are included, should be taken into consideration.

Table 56 shows, for the children born in 1890 who died in 1890 and 1891, the months of death in each of those years. The large number of children who died under one month of age may be noted. The per cents of deaths under one month to total deaths under one year, and to total births, are stated for each month of birth.

Table 57 concludes the list of tables relating particularly to deaths of the very young. It shows the per cents, by sex, of deaths of infants aged under one month to births for each month of the year 1891. The ratios may be compared with those for 1890 contained in the preceding table.

Table 58, in regard to centenarians, is given in the usual form of preceding reports. The statement of the personal particulars is a matter of somewhat doubtful taste and of more than doubtful accuracy, since there is no verification attempted in any case. The total number of deaths of persons over seventy returned for the year was 3,309 or 15.3 per cent of all deaths at specified ages. Deaths of those over 80 were 1,248 or 5.8 per cent; of those over 90, 174 or .8 per cent.

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		Number born in each month of previous year, 1890.		Deaths by months, 1891.											
11.	Number of each sex.	Totals.	Year.	Of those born in year of death.				Of those born in previous year.				All aged under 1 year.			
				Sex.		Total.	Sex.		Total.	Sex.		Total.			
6			Born in 1890.	Born in 1891.	107	71	178	72	63	135	179	134	313		
3	6	9			115	98	213	66	67	133	181	165	346		
7	7				156	107	263	71	49	120	227	156	383		
5	10	17			172	144	316	52	35	87	224	179	403		
6	16	34			141	129	270	38	28	66	179	157	336		
2	18				185	134	319	33	35	68	218	169	387		
4	24	38			209	177	386	58	51	104	262	225	490		
6	28	54			332	277	609	55	52	107	347	329	716		
9	40	69			395	241	546	31	28	59	336	269	605		
10	52	111			264	202	466	13	6	19	277	208	485		
17	36	75			225	152	377	3	4	7	228	156	384		
12	39				283	234	517				283	244	517		
12				2,494	1,966										
21					4,460										
82	487						487	418							
60	418														
142		905							905						
94										2,981	2,844				
69															
163												5,865			

7.	8.	9.
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5	5	4
6	6	7
8	6	5
9	14	15
14	9	11
18	15	12
13	17	13
19	15	10
17	9	8
14	9	9
11	9	7
8	9	8
2	6	7
8	10	6
14	8	8
67	43	23
57	31	92
124	75	45
50	69	72
41	55	64
91	124	136
17	112	95
98	87	86
15	199	181

TABLE 54.—Exhibiting, by sex, the number of children under one year of age, returned as the months in which they died, their ages in months at death, the months in which they were born (Still-births included.)

Months in which births and deaths occurred.	Number born in each month of year of death, 1891.				Number of children who died at each age in months, during each month of the year, 1891.*										
	Year.	Totals.	Sex.	Number of each sex.	-1.	1.	2.	3.	4.	5.	6.	7.	8.	9.	
January	Born in 1891.	415	{ Males..... Females.....	237 178	107 71	11 11	13 6	9 5	4 8	5 6	2 8	6 3	7 4	5 6	
February		447	{ Males..... Females.....	241 206	100 80	15 18	8 11	11 10	9 2	6 5	2 9	12 6	5 5	6 5	
March		490	{ Males..... Females.....	288 202	129 80	12 16	15 11	7 9	9 3	12 8	9 6	7 1	9 7	6 7	
April		495	{ Males..... Females.....	267 228	110 102	21 18	18 11	13 13	7 7	6 3	7 5	5 4	8 2	8 5	
May		434	{ Males..... Females.....	232 202	107 85	11 11	11 18	6 12	6 3	6 2	10 5	5 5	5 5	3 4	
June		417	{ Males..... Females.....	223 194	120 71	10 18	22 14	13 10	8 13	12 8	6 9	6 8	6 6	7 5	
July		369	{ Males..... Females.....	215 154	105 72	20 19	22 17	16 29	22 12	13 16	11 12	9 14	14 9	15 11	
August		384	{ Males..... Females.....	215 169	121 97	23 22	28 40	32 28	43 35	36 22	31 20	18 13	15 17	12 13	
September		284	{ Males..... Females.....	161 123	101 84	46 31	38 25	19 31	20 17	20 10	27 17	19 17	15 9	10 8	
October		240	{ Males..... Females.....	111 99	108 77	26 18	24 15	23 18	12 12	22 18	17 17	14 11	9 9	9 7	
November		231	{ Males..... Females.....	141 90	121 73	14 15	19 10	10 13	13 9	8 8	11 5	8 2	9 6	8 7	
December		254	{ Males..... Females.....	133 121	133 121	20 17	19 7	15 11	14 13	13 8	16 13	8 14	10 8	6 8	
Of those born in year of death.	1891.		{ Males..... Females.....	2,491 1,966	1,372 1,013	218 203	216 168	147 165	138 114	124 90	113 84	67 57	43 32	23 92	
		4,460	Totals		2,385	421	384	312	252	214	197	124	75	45	
Of those born in previous year.	1890.		{ Males..... Females.....			11 11	21 17	27 24	29 20	35 24	36 42	50 41	69 55	72 64	
			Totals			32	38	51	49	59	78	91	124	136	
aged one			{ Males..... Females.....			1,372 1,013	229 185	237 189	174 134	167 114	159 126	149 98	117 87	95 86	
			Totals		2,385	443	422	363	301	273	275	215	199	181	

* Deaths in which the sex or month of death was not stated.

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TABLE 54.—Exhibiting, by sex, the number of children under one year of age, *return* the months in which they died, their ages in months at death, the months in which (Still-births included.)

Months in which births and deaths occurred.	Number born in each month of year of death, 1891.				Number of children who died at each age in during each month of the year, 1891.										
	Year.	Totals.	Sex.	Number of each sex.	-1.	1.	2.	3.	4.	5.	6.	7.	8.	9.	
January	Born in 1891.	415	{ Males..... Females.....	237 178	107 71	11 11	13 6	9 5	4 8	5 6	2 8	6 3			
February		447	{ Males..... Females.....	241 206	100 80	15 18	8 11	11 10	9 2	6 5	2 9	12 6			
March		490	{ Males..... Females.....	288 202	129 80	12 16	15 11	7 9	9 3	12 8	9 6	7 1			
April		495	{ Males..... Females.....	267 228	110 102	21 18	18 11	13 13	7 7	6 3	7 5	5 4			
May		434	{ Males..... Females.....	232 202	107 85	11 11	11 18	6 12	6 3	6 2	10 5	5 5			
June		417	{ Males..... Females.....	223 194	120 71	10 18	22 14	13 10	8 13	12 8	6 9	6 8			
July		369	{ Males..... Females.....	215 154	105 72	20 19	22 17	16 29	22 12	13 16	11 12	9 14			
August		384	{ Males..... Females.....	215 169	121 97	23 22	28 40	32 28	43 25	36 22	31 30	18 13			
September		284	{ Males..... Females.....	161 123	101 84	46 31	38 25	19 31	29 17	39 10	27 17	19 17			
October		240	{ Males..... Females.....	141 99	108 77	26 18	24 15	23 16	12 12	22 18	17 17	14 11			
November		231	{ Males..... Females.....	141 90	121 73	14 15	19 10	39 12	13 9	8 6	11 6	2 2			
December		254	{ Males..... Females.....	133 121	133 121	20 17	19 7	15 11	14 13	13 8	15 13	1 1			
Deaths by ages.		Of those born in year of death.	1891.	{ Males..... Females.....	2,491 1,906	1,372 1,013	218 202	246 166	147 106	178 114	124 90	112 74	7 1		
				Totals	2,395	1,385	420	412	253	292	214	186	9		
		Of those born in previous year.	1890.	{ Males..... Females.....			31 24	23 17	27 20	20 11	20 13	2 2	2 2		
				Totals			55	39	47	31	33	4	4		
		All aged under one year.		{ Males..... Females.....	2,491 1,906	1,372 1,013	218 202	246 166	147 106	178 114	124 90	112 74	7 1		
				Totals	2,395	1,385	420	412	253	292	214	186	9		

* Excluding 93 deaths in which the sex or month of death was not ascertained.

INFANT MORTALITY.

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Months of births.	Born in 1890.				Births of males 1890 as returned.	Males born in 1890.				Births of females 1890 as returned.	Females born in 1890.				
	Births in 1890 as returned.	Died during the year 1890.	Died under 1 year during the year 1891.	Total died aged under 1 year.		Per cent of deaths under 1 to births.	Died during the year 1890.	Died aged under 1 year during the year 1891.	Total died aged under 1 year.		Per cent of deaths under 1 to births.	Died during the year 1890.	Died aged under 1 year during the year 1891.	Total died aged under 1 year.	Per cent of deaths under 1 to births.
Totals	* 52,264	4,451	905	5,356	10.2	27,506	2,555	487	3,042	11.1	24,667	1,896	418	2,314	9.3
January	4,130	412	-----	412	10.2	2,197	231	-----	231	10.5	1,924	181	-----	181	9.5
February	3,718	439	9	448	11.9	1,962	237	6	243	12.4	1,754	202	8	205	11.6
March	4,356	399	17	416	9.5	2,274	233	7	240	10.6	2,073	166	10	176	8.5
April	4,407	466	34	500	11.3	2,365	268	16	284	12.0	2,086	198	18	216	10.6
May	4,568	424	38	462	10.1	2,416	249	24	273	11.3	2,144	175	14	189	8.8
June	4,313	509	54	563	13.1	2,321	312	28	340	14.6	1,969	197	26	223	11.2
July	4,397	388	69	437	9.9	2,309	199	40	237	10.4	2,062	169	29	198	9.5
August	4,651	349	75	424	9.1	2,451	199	36	235	9.5	2,192	150	39	189	8.2
September	4,517	324	111	435	9.6	2,325	173	59	232	10.0	2,177	151	52	203	9.3
October	4,219	258	151	409	10.0	2,162	151	87	238	11.0	2,061	107	64	171	8.3
November	4,223	250	161	411	9.5	2,222	157	95	252	11.3	1,969	93	66	159	7.9
December	4,765	253	186	439	9.2	2,502	146	89	235	9.4	2,256	107	97	204	9.0

* Excluding 42 in unknown month; 17 males, 20 females and 5 unknown.

TABLE 56.—The months of births and of deaths of children born in 1890, who died under one year of age.

Months of birth, 1890.	Born in 1890 and died under 1 year of age.*	Months of death, 1890.												Months of death, 1891.												Per cent of deaths under 1 month to deaths under 1 year.	Births in 1890,†	Per cent of deaths under 1 month to births.	
		Months of death, 1890.												Months of death, 1891.															
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.				
Totals	5,344	218	243	232	269	319	422	446	527	509	404	373	457	135	133	120	87	66	68	104	107	59	19	7	—	49.9	52,264	5.1	
January	412	18	15	19	21	22	14	34	21	19	6	8	12	—	—	—	—	—	—	—	—	—	—	—	—	52.9	4,130	5.3	
February	448	225	28	16	19	26	34	47	14	9	10	11	9	9	—	—	—	—	—	—	—	—	—	—	—	50.2	3,718	6.1	
March	416	185	17	19	25	43	45	30	14	8	13	7	10	7	10	—	—	—	—	—	—	—	—	—	—	44.5	4,356	4.2	
April	498	215	42	25	50	49	36	22	15	10	11	11	12	11	11	8	8	—	—	—	—	—	—	—	—	43.4	4,407	4.8	
May	452	207	37	33	50	36	22	16	13	11	11	8	8	11	11	8	8	—	—	—	—	—	—	—	—	45.8	4,598	4.5	
June	563	205	41	50	51	29	16	27	9	10	13	12	10	9	10	13	12	10	—	—	—	—	—	—	—	52.4	4,313	6.8	
July	437	211	54	38	28	22	15	10	13	16	13	6	6	10	18	16	13	6	6	—	—	—	—	—	—	48.2	4,397	4.8	
August	424	211	39	15	33	11	8	10	7	9	19	—	—	11	11	8	10	7	9	19	—	—	—	—	—	49.8	4,651	4.5	
September	435	234	33	29	28	12	11	15	9	10	12	13	29	12	11	15	9	10	12	13	29	—	—	—	—	53.8	4,517	5.2	
October	409	202	32	31	—	—	—	—	—	—	—	—	—	14	11	20	12	10	12	26	21	25	—	—	—	49.4	4,219	4.7	
November	411	212	38	19	21	12	9	15	14	23	25	16	7	19	21	12	9	15	14	23	25	16	7	—	—	51.6	4,223	5.0	
December	439	253	22	16	14	8	15	23	32	18	12	7	—	22	19	16	14	8	15	23	32	18	12	7	—	58.3	4,765	5.3	
Deaths at each age { No. of deaths, each age { Ages in mos.	5,344	2688	403	340	338	309	241	254	168	170	165	134	154	—	2688	403	340	338	309	241	254	168	170	165	134	154	49.9	—	—
		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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* Excluding deaths in unknown month.

† Excluding 43 in unknown month; 17 males, 20 females, and 5 unknown.

TABLE 57.—The relation, by months, of the decedents aged under one month to the births returned for the year 1891.

Sex, etc., specified.	Year. 1891.	Months, 1891.												
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Unk.
Totals.	Births a	50,813	3,339	3,334	4,345	4,333	4,078	4,398	4,702	4,646	4,340	4,068	4,391	53
	Deaths aged under one month a	2,470	183	184	215	223	196	180	226	193	192	301	263	1
	Per cent of deaths to births	4.9	5.0	5.3	4.5	5.4	4.8	4.4	4.9	4.1	4.4	4.9	6.0	2.0
Males	Births.....	26,480	1,914	1,857	2,302	2,305	2,060	2,180	2,435	2,431	2,398	2,192	2,393	23
	Deaths aged under one month.....	1,373	107	100	129	120	107	120	105	101	108	121	183	---
	Per cents of deaths to births.....	5.3	5.6	5.9	5.6	5.4	4.7	5.7	4.8	4.1	4.7	5.5	5.9	---
Females	Births.....	24,246	1,708	1,674	2,045	2,028	1,979	2,097	2,265	2,205	2,030	1,898	2,115	25
	Deaths aged under one month.....	1,013	71	80	80	102	85	71	72	84	77	78	121	---
	Per cent of deaths to births.....	4.3	4.3	4.8	3.9	5.0	3.9	3.5	3.4	3.8	3.8	3.8	5.7	---
Unknown.....	Births.....	127	7	3	8	8	15	9	12	10	13	8	13	5
	Deaths aged under one month.....	88	4	4	6	6	10	5	8	7	7	7	8	1

a Still-births included in births and deaths.

TABLE 58.—*Exhibiting certain details concerning persons returned as having died aged one hundred years and over during the year 1891.*

Names of centenarians, 1891.	Sex.	Color.	Married, single or widowed.	Birthplace.	Age.			Occupation.	Place of death.		Date of death, 1891.		Cause of death.
					Years.	Months.	Days.		Town.	County.	Month.	Day.	
Susanne Becker	Female ...	White ...	Married ..	Mackinaw ..	111	...	...	Not stated ..	Kalkaska ..	Kalkaska ..	January ..	27	Old age.
John Brooks	Male	White ...	Widower ..	New York ..	105	...	1	Farmer	Wright	Hillsdale ..	June	19	Gangrene.
Harriet Coe	Female ...	White ...	Widow ...	Connecticut	105	3	...	Housekeep'r	Polkton	Ottawa	May	18	Old age.
Elisha Hiscock	Male	White ...	Married ..	Vermont	100	...	...	Farmer	York	Washtenaw.	February ..	20	Old age.
John Murray	Male	White ...	Widower ..	Scotland ...	107	...	...	Farmer	Greenwood ..	Oceana	May	29	Dropsey.
Nahwegechegahmequa	Female...	Indian..	Not stat'd	Michigan...	110	...	...	Not stated ..	Leelanau	Leelanau ..	August	25	Old age.
Thomas Rooney	Male	White ...	Widower ..	Ireland	109	...	...	Farmer	Fremont	Newaygo ..	November ...	15	La grippe.
Mary Seivings	Female ...	White ...	Widow ...	Maryland ..	100	9	14	Not stated ..	Sunfield	Eaton	July	8	Old age.

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TABLE 59.—Counties and townships from which no returns of deaths for 1891 were received by this department, showing population in 1890.

County.	Township or ward.	Population by U. S. census of 1890.	County.	Township or ward.	Population by U. S. census of 1890.
Antrim	Banks	802	Luce	McMillan	1,949
	Chestonia	587		Garfield	1,080
	Milton	868		Hendricks	282
	Star	380		Holmes	1,080
Baraga	Arvon	209	Mackinac	Newton	762
Clare	Arthur	168		St. Ignace	180
	Ball	95		St. Ignace City	2,704
Crawford	Beaver Creek	170		1st ward	472
	Blaine	51		2d ward	612
	Frederic	260		3d ward	790
	Grove	204		4th ward	830
Chippewa	South Branch	106	Manitou	Chandler	177
	Detour	964		Humboldt	608
	Trout Lake	112	Marquette	Tilden	908
	Superior	898		Turin	100
Gladwin	Buckeye	581	Mason	Lincoln	171
Gogebic	Watersmeet	606	Menominee	Meyer	1,252
Gd. Traverse	Green Lake	371		Bohemia	92
	Burlleigh	448	Ontonagon	Greenland	272
Iosco	Thompson	55		Interior	559
	Bates	594		McMillan	597
Iron	Crystal Falls	1,176		Ontonagon	1,564
	Felch	414	Oscoda	Atherton	99
	Iron River	1,426		Big Creek	187
	Mastodon	111		Harmon	161
Jackson	Stambagh	711		Mentor	607
	Henrietta	1,145	Otsego	Bagley	689
	Springport	1,474	Presque Isle	Krakow	385
	Glade	183		Richland	1,221
Kalkaska	Chase	1,169	Saginaw	Spaulding	516
	Cherry Valley	301		Thomastown	1,200
	Eden	120	Roscommon	Higgins	586
	Elk	569	Wayne	Sumpter	1,523
Lake	Glencoe	94		Total	42,377
	Pinora	890			

Table 59, showing the number of townships—in one instance an entire county—that entirely failed to make returns for the year 1891, constitutes the largest list of delinquent townships that has occurred under State registration. It emphasizes strongly the necessity of immediate examination of the returns when received and an early attempt, by correspondence with the county clerks or directly with the supervisors who have failed to do their duty under the law, to secure all missing returns before so much time has elapsed as to render it impossible.

A large deficiency also existed in the enumeration of births (see Table 29), but not to so great an extent as in the case of deaths.

Deducting the number of inhabitants from whom no returns of deaths were made, from the population of the State in 1890, we have a remainder of 2,051,512 inhabitants upon which number the death-rate of the State should strictly be based. Allowing for increase of population from 1890 to 1891 the death-rate for actually enumerated population would be about 10.6 per 1,000, or .3 per 1,000 higher than that stated in Exhibit E.

Table 60, which gives a list of those townships in which the supervisors reported that no deaths occurred during the year 1891, undoubtedly contains some townships that properly belong in the preceding table.

A full statement is given in Table 61 for each county of the State, of the number of persons of each sex who died during each month of 1891, and also the ages, grouped in periods of five years, of all decedents.

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TABLE 60.—Townships in which it was reported that no deaths occurred in 1891, showing population in 1890.

County.	Township.	Population by U. S. census of 1890.	County.	Township.	Population by U. S. census of 1890.
Total		12,535	Keweenaw.....	Houghton.....	189
Alcona	Mitchell.....	83	Menominee	{ Cedarville.....	536
Alger	{ Burt.....	177		{ Holmes.....	376
	{ Rock River	328	Missaukee.....	{ Bloomfield.....	159
Alpena	{ Ossineke.....	182		{ West Branch.....	230
	{ Sanborn.....	204	Montmorency	{ Briley.....	338
	{ Adams.....	222		{ Rust.....	203
Arenac	{ Deep River.....	711	Newaygo	Croton.....	706
	{ Moffat.....	240		{ Beaver Lake	284
	{ Turner.....	48		{ Goodar.....	97
Baraga	Spurr.....	269		{ Hill.....	47
Bay	Mt. Forest.....		Ogemaw.....	{ Klacking.....	291
Benzie.....	Lake.....	170		{ Mills.....	66
Charlevoix	Bay.....	469		{ Ogemaw.....	272
Cheboygan	{ Ellis.....	159		{ Richland.....	382
	{ Forest.....	161	Ontonagon.....	{ Carp Lake	18
	{ Frost.....	134		{ Chester.....	177
Clare	{ Hayes.....	944	Otsego	{ Hayes.....	165
	{ Redding.....			{ Denton.....	75
Delta.....	Sack Bay.....	196	Roscommon	{ Gerrish.....	66
Gladwin.....	Tobacco.....	196		{ Markey.....	28
Houghton.....	{ Duncan.....	476		{ Nester.....	159
	{ Laird	159	Washtenaw	Salem.....	1,182
Isabella	Sherman.....	538	Wexford	Hanover	209
Kalkaska.....	{ Oliver.....	181			
	{ Wilson.....	146			

TABLE 61.—Exhibiting for the State and counties, by sex, the number of deaths returned in each month of the year 1891, and the number of deaths of each period of age.

State and counties.	Sex.	Year, 1891.	Months, 1891.												Ages in periods of years, 1891.																			
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.	
State	Totals	22,079	1486	1385	1774	2074	1732	1560	1678	2147	1973	2011	1860	2261	48	7685	985	556	740	1022	849	779	754	888	764	735	801	989	1046	1065	996	1248	457	
	Males	11,908	813	740	935	1107	927	855	880	1155	1077	1096	1037	1258	28	4162	519	287	340	506	446	375	382	318	397	414	490	515	606	614	602	709	226	
	Females	9,968	665	637	829	956	792	695	779	967	877	901	807	1075	18	3499	466	269	400	516	403	404	372	340	357	321	341	424	439	451	394	539	153	
	Unknown.	173	8	8	10	11	13	10	19	25	19	14	16	18	2	94	1	—	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	77
Alcona	Totals	25	1	2	1	3	3	3	1	2	1	3	3	2	—	11	—	—	—	—	4	1	—	—	—	—	1	4	1	2	—	—	1	
	Males	12	—	1	—	2	2	2	—	1	—	2	1	1	—	7	—	—	—	—	1	—	—	—	—	—	2	—	1	—	—	—	1	
	Females	13	1	1	1	1	1	1	1	1	1	1	2	1	—	4	—	—	—	—	3	1	—	—	—	1	2	1	1	—	—	—	—	
	Totals	2	—	—	—	1	—	—	—	—	—	—	—	1	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Alger	Males	2	—	—	—	1	—	—	—	—	—	—	—	1	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	Females	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	Totals	455	29	25	42	50	35	29	29	48	42	38	36	54	—	119	8	8	18	20	13	13	19	17	8	19	22	29	35	37	29	35	6	
	Males	248	16	12	18	30	21	15	18	15	28	18	24	33	—	68	2	3	10	8	5	6	12	10	3	9	9	15	22	20	19	23	3	
Allegan	Females	202	13	13	23	20	14	13	10	31	14	18	12	21	—	47	6	5	8	12	8	7	7	4	10	13	14	12	17	10	12	3	—	
	Unknown	5	—	—	1	—	—	—	—	1	1	2	—	—	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—
	Totals	150	7	10	7	23	9	8	10	23	14	13	6	20	—	72	3	2	7	5	7	7	11	7	4	4	5	3	1	6	2	3	1	
	Males	83	4	6	2	12	4	5	7	14	8	6	4	11	—	42	1	2	3	2	3	3	6	4	1	3	4	1	1	2	1	3	1	
Alpena	Females	67	3	4	5	11	5	3	3	9	6	7	2	9	—	30	2	—	4	3	4	4	5	3	3	1	1	2	—	—	4	1	—	

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Antrim	Totals	76	3	2	8	8	7	7	6	6	11	10	8	5	37	1	1	2	4	1	2	6	3	4	3	2	1						
	Males	39	2	2	1	4	3	5			5	6	2	4	13			1	1	1	1	1	1	3	3	4	2	1					
	Females	35	1		2	4	4	1	1	5	6	4	6	1	17	1	1	1	3			1	5	2	1		1	1					
	Unknown	2						1							2																		
Arenac	Totals	31	2	1	2	6	7	1	2	1	2	2	1	2	10	2	4			2	1	1	1	1	2	2	3	13					
	Males	16				5	3	1	2	1		1		1	2	5	1		1	2		1	1		2	1	1	14					
	Females	15	2	1	2	3	4						1	2	5	1		3		1				1	2		2						
	Unknown																																
Baraga	Totals	38		1	3		4	5	4	9	4	2	6	14	2	5	3	1	2	1		2	1	2	1	1	1	2					
	Males	22		1	1		2	3	1	7	3	1	3	10	2	1	1	1	1		1	1	2					2					
	Females	16				2		2	2	2	1	1	3	4		4	2		2					1	1	1		1					
	Unknown																																
Barry	Totals	181	17	13	16	24	8	21	12	11	15	20	9	15	36	6	4	6	8	2	7	6	9	7	8	10	19	16	2				
	Males	108	10	8	9	19	3	14	6	5	7	13	5	9	24	4	3	5	4	2	2	3	4	3	4	7	9	8	7	11	7	1	
	Females	72	7	5	6	5	5	7	6	8	7	4	6	11	2	1	1	1	4		5	3	5	4	4	8	4	4	3	8	9	1	
	Unknown	1																															
Bay	Totals	534	38	26	47	47	37	33	40	61	47	55	40	62	1	216	18	15	29	24	24	22	17	17	13	17	16	23	16	15	13		
	Males	286	19	11	29	27	16	17	22	38	21	32	23	31	110	12	5	13	15	13	11	15	9	8	11	7	8	7	14	9	8	6	
	Females	248	19	15	18	20	21	16	18	23	26	23	17	31	106	6	10	11	9	11	11	7	8	9	6	6	9	9	7	7	7	7	
	Unknown																																
Benzie	Totals	58	5	1	4	6	4	9	6	8		1	4	10	24	3		2	4	2	2	3	2	1		2	3	6	2	8	2		
	Males	27	2		3	2	4	2	2	4		1	6	10						2	2	2				1	2	2		2	2		
	Females	31	3	1	1	4		7	4	4			3	4	14	3				2		1	2	1		1	4			1	2		
	Unknown																																
Berrien	Totals	322	17	27	33	25	34	24	22	22	27	28	27	36		86	8	13	14	11	9	11	10	16	3	12	9	21	17	26	24	19	13
	Males	167	9	8	17	12	16	11	13	13	16	17	15	20	43	2	7	6	7	5	5	6	6	1	6	6	8	12	9	16	14	8	
	Females	153	8	18	16	13	18	13	9	9	11	11	11	16	41	6	6	8	4	4	4	6	4	10	2	6	3	13	5	17	8	5	5
	Unknown	2		1										1	2																		
Branch	Totals	261	19	39	21	33	21	17	11	19	21	25	27	18		52	9	9	8	10	10	11	10	9	9	10	15	14	19	18	34	5	
	Males	144	9	11	14	15	9	12	5	11	14	16	16	12	28	4	8	1	5	8	4	7	2	8	7	4	6	8	12	11	18	3	
	Females	116	10	18	7	18	12	5	6	8	7	9	10	6	23	5	1	7	5	2	7	3	7	1	2	6	9	6	7	7	16	2	
	Unknown	1													1																		

TABLE 61.—CONTINUED.—Deaths by counties, by sex, by months, and by ages, 1891.

Counties.	Sex.	Year, 1891.	Months, 1891.												Ages in periods of years, 1891.																			
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.	
Calhoun	Totals	355	21	23	21	35	36	19	22	31	27	36	32	51	1	72	9	5	9	13	8	9	16	12	15	14	10	21	23	47	24	46	2	Unknown.
	Males	208	12	11	11	21	19	12	11	17	18	23	22	30	1	49	6	2	5	6	2	2	6	8	8	8	5	13	15	26	17	28	2	
	Females	147	9	12	10	14	17	7	11	14	9	13	10	21	—	23	3	3	4	7	6	7	10	4	7	6	5	8	8	21	7	18	—	
Cass	Totals	151	15	13	3	18	9	10	12	16	11	17	9	18	—	19	8	5	5	8	7	7	4	5	6	8	8	12	16	14	8	11	—	
	Males	82	10	7	2	8	6	8	9	7	3	11	2	9	—	11	4	2	2	1	4	3	2	1	2	6	6	6	11	9	5	7	—	
	Females	69	5	6	1	10	3	2	3	9	8	6	7	9	—	8	4	3	3	7	3	4	2	4	4	2	2	6	5	5	3	4	—	
Charlevoix	Totals	73	7	4	5	6	11	10	6	4	7	4	3	6	—	25	4	3	4	1	4	1	4	2	2	1	2	4	7	4	—	1	—	
	Males	41	7	2	4	3	4	5	2	6	1	2	2	2	—	13	3	3	3	—	3	—	—	—	—	—	—	2	1	5	2	—	—	
	Females	32	—	2	1	3	8	6	1	2	1	3	1	4	—	12	1	—	1	1	1	1	2	1	1	1	2	1	5	2	—	2	—	
Cheboygan	Totals	90	2	6	6	2	5	10	9	18	12	3	11	6	—	40	10	6	4	5	2	2	3	2	5	1	—	3	1	2	1	2	1	
	Males	49	1	2	4	2	4	6	7	10	5	2	4	2	—	26	5	2	3	1	—	1	—	—	—	—	—	2	1	2	1	1	—	
	Females	41	1	4	2	—	1	4	2	8	7	1	7	4	—	14	5	4	1	4	2	1	3	—	3	1	1	—	—	—	—	—	1	1
Chippewa	Totals	79	8	—	6	11	7	4	7	9	5	6	8	5	3	25	3	2	5	7	2	2	—	1	2	2	—	3	7	4	6	4	—	
	Males	46	4	—	3	6	5	3	4	5	2	2	3	3	1	13	2	2	3	3	2	—	—	1	2	1	—	2	6	2	3	1	3	
	Females	32	4	—	3	5	2	1	3	4	—	3	4	—	2	12	1	—	2	4	—	2	—	—	—	1	1	1	1	2	3	—	—	
Chippewa	Unknown.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
	Totals	61	4	3	6	8	4	1	1	10	8	3	8	4	1	30	1	3	5	3	4	1	—	—	1	3	2	2	—	—	2	2	2	
	Males	27	1	3	2	2	—	—	—	1	7	2	1	4	3	1	15	—	1	2	—	4	1	—	—	—	1	1	—	—	—	1	1	1
Chippewa	Females	34	3	—	4	6	4	1	—	3	6	2	4	1	—	15	1	2	3	3	—	—	—	—	1	2	1	—	2	1	—	—	1	2

DEATHS—BY COUNTIES, BY SEX, BY MONTHS, BY AGE.

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Clinton	Totals	218	19	9	14	22	23	12	21	13	20	29	7	29	53	16	6	4	13	9	5	8	6	6	8	13	8	10	19	18	12	1	
	Males	110	9	5	6	11	14	7	9	6	13	13	2	15	26	4	3	2	5	4	2	3	3	3	3	6	8	5	8	12	7	1	
	Females	108	10	4	8	11	9	5	12	7	7	16	5	14	27	12	3	2	8	5	6	5	3	3	2	5	3	2	11	6	5		
Crawford	Totals	9		1	1				2		1		1	3	3			1	2										2	1			
	Males	7		1	1				1		1			3	2			1	2										2				
	Females	2											1		1															1			
Herk	Totals	172	8	10	14	14	15	8	14	25	18	14	16	16	84	13	6	6	7	10	4	10	4	6	2	2	1	5	2	2	6		
	Males	108	3	8	7	8	13	4	11	16	11	7	10	10	55	7	2	3	3	8	2	7	2	4	2	1		3	1	1	5	5	
	Females	62	5	2	7	6	2	4	3	9	6	6	6	6	27	6	4	3	4	2	2	3	2	2		1	1	2	1	1	1	1	
Levinson	Unknown	2									1	1			2																		
	Totals	224	15	12	21	9	12	18	26	39	19	22	13	19	116	2	2	2	20	13	16	8	9	6	4	4	2			1	2	9	
	Males	147	9	9	15	7	6	9	18	24	15	14	8	13	62	2		2	16	12	14	6	7	6	4	4	2				1	8	
Eaton	Females	74	6	3	6	2	6	9	7	15	4	7	5	4	51			2	4	1	2	2	1	3	2		2	2			1	1	
	Unknown	3										1		2	3																		
	Totals	331	28	18	12	37	30	25	23	31	26	39	26	38	163	7	5	7	15	13	9	8	10	19	11	21	21	24	31	29	36	5	
Emmet	Males	156	13	6	4	13	16	14	9	16	12	21	10	17	31	3	1	2	7	7	8	2	5	6	2	11	8	12	14	19	22	1	
	Females	177	15	12	8	19	14	11	13	15	14	18	16	21	31	4	4	5	8	6	6	6	5	13	9	10	13	12	17	10	14	4	
	Unknown	1							1						1																		
Genesee	Totals	117	5	8	15	9	6	7	8	14	19	13	6	7	49	2	6	6	7	6	2	5	5	2		6	1	5	4	5	1		
	Males	62	4	7	6	5	4	3	3	3	11	8	5	3	22	2	5	4	3	4	2	3	2	2		3	1	1	2	3	2	1	
	Females	52	1	1	8	4	2	4	5	10	8	5	1	3	24		1	2	4	2		2	3			3		4	2	2	3		
Livingston	Unknown	3			1					1				1	3																		
	Totals	384	26	23	31	41	36	25	19	37	36	38	35	34	77	7	9	10	16	14	10	12	17	17	13	15	18	31	27	31	48	7	
	Males	192	10	10	15	18	15	12	14	15	21	24	20	18	42	4	3	3	4	3	3	8	5	4	11	7	7	19	16	21	28	4	
Livingston	Females	192	16	13	16	23	21	13	5	22	15	14	15	16	35	3	6	7	12	11	7	4	12	13	7	8	11	12	11	10	20	3	

DEATHS—BY COUNTIES, BY SEX, BY MONTHS, BY AGE.

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[illegible]

TABLE 61.—CONTINUED.—Deaths by counties, by sex, by months, and by ages, 1891.

Counties.	Sex.	Year, 1891.	Months, 1891.												Ages in periods of years, 1891.																					
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.			
Mecosta.....	Totals.....	163	8	4	9	13	11	7	13	16	25	22	19	16	61	5	2	8	2	7	3	4	4	8	5	6	5	6	5	6	5	6	7	5	4	21
	Males.....	98	3	3	2	7	9	7	9	6	19	11	12	10	36	1	1	2	...	3	2	3	2	5	4	4	4	4	5	3	2	4	17			
	Females...	65	5	1	7	6	2	...	4	10	6	11	7	6	25	4	1	6	2	4	1	1	2	3	1	2	1	1	1	1	4	3	4			
Menominee....	Totals.....	144	11	7	9	14	5	10	16	17	21	14	14	6	89	9	3	4	2	6	3	4	4	4	3	1	...	3	2	2	5	3				
	Males.....	81	7	5	1	10	1	7	8	9	15	8	6	4	51	3	...	2	1	4	...	3	3	3	2	1	...	2	2	2	3	3				
	Females...	62	4	2	8	4	4	3	7	8	6	6	8	2	37	6	3	2	1	2	3	1	1	2	1	...	1	...	...	...	...	...	2
Midland.....	Unknown.	1	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Totals.....	98	10	5	10	13	11	8	8	10	8	5	4	6	37	7	2	3	4	4	...	3	6	1	6	4	5	3	6	3	4	...	...	
	Males.....	45	4	2	7	8	4	2	3	4	3	2	3	3	15	3	...	1	1	2	...	2	2	...	6	...	4	1	5	2	1	...	...	
Missaukee.....	Females...	53	6	3	3	5	7	6	5	6	5	3	1	3	22	4	2	2	3	2	...	1	4	1	...	4	1	1	2	1	1	3		
	Totals.....	41	3	2	1	2	2	4	6	7	4	3	2	5	19	...	...	7	2	3	...	1	2	...	1	1	1	1	...	...	...	2	2
	Males.....	27	2	2	1	2	2	1	3	5	3	2	2	2	12	...	...	6	1	1	...	1	2	...	1	1	1	...	...	...	1	1	
Monroe.....	Females...	14	1	3	3	2	1	1	3	7	1	1	2		
	Totals.....	307	19	21	32	37	20	27	24	25	27	25	25	25	90	13	9	7	15	17	10	9	8	7	6	15	15	16	17	25	28	...	...	
	Males.....	173	4	13	24	13	18	9	18	11	15	15	18	15	60	8	5	3	6	9	5	1	1	1	1	4	9	11	9	8	13	20	...			
Montcalm.....	Females...	133	15	8	8	19	9	11	9	12	10	12	10	10	29	5	4	4	9	8	5	8	7	6	2	6	4	7	9	12	8	...	...	
	Unknown.	1	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Totals.....	251	16	11	21	18	22	18	20	27	26	21	21	29	1	78	12	11	8	12	8	12	8	7	8	9	8	8	19	13	14	12	4			
Muskegon.....	Males.....	130	8	2	12	15	7	12	15	14	10	13	9	1	43	7	4	4	6	1	3	3	4	3	5	6	3	12	9	5	9	3	...			
	Females...	121	8	9	9	6	7	11	8	12	12	11	8	20	35	5	7	4	6	7	9	5	3	5	4	2	5	7	4	9	3	1	...			

DEATHS—BY COUNTIES, BY SEX, BY MONTHS, BY AGE.

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[illegible]

TABLE 61.—CONTINUED.—Deaths by counties, by sex, by months, and by ages, 1891.

Counties.	Sex.	Year, 1891.	Months, 1891.												Ages in periods of years, 1891.																			
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.	
Oscoda	Totals	6	1	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Males	4	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	Females	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Ontonagon	Totals	41	2	4	5	2	5	6	5	2	7	3	23	23	2	1	2	1	2	1	2	1	2	1	2	3	1	1	1	1	1	1	1	1
	Males	27	2	3	3	1	2	4	4	1	6	1	17	17	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	
	Females	13	1	2	1	3	2	2	2	1	1	2	5	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Ontonagon	Unknown	1													1																			
	Totals	316	28	20	25	25	27	21	23	27	28	30	24	37	1	125	18	11	9	14	11	10	8	4	4	7	10	11	16	17	12	19	10	
	Males	181	16	9	12	18	12	11	18	18	13	16	14	25	1	64	11	5	5	7	8	6	6	1	2	5	7	8	11	14	7	13	6	
Ontonagon	Females	135	12	11	13	9	15	10	5	9	15	14	10	12		61	7	6	4	7	8	4	2	3	2	2	3	5	5	3	5	6	4	
	Totals	41	3	3	1	9	3	4	2	2	3	4	3	4		21	3	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	
	Males	22	2	2	1	5	1	2	1	2	2	1	1	2		12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Presque Isle	Females	19	1	1		4	2	2	1		1	3	2	2		9	2		1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	
	Totals	6			1	1			2	1				1		2			1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	
	Males	4			1	1			1	1						2																		
Roscommon	Females	2												1																				
	Totals	931	60	59	59	58	61	60	59	95	99	81	81	96	5	390	57	39	36	55	25	26	31	23	34	25	34	43	37	29	25	27	25	
	Males	500	32	29	54	46	32	39	26	53	58	34	42	46	4	195	32	23	15	35	14	16	16	14	17	10	15	22	18	17	14	12	14	
Saginaw	Females	431	28	30	35	40	29	21	33	37	41	47	39	50	1	195	25	16	21	19	11	10	15	9	17	15	19	21	19	12	11	15	11	

COLOR AND NATIVITY OF DECEDENTS, 1901.

In Table 62 a general comparison is made, by sex, of the number of deaths of each color and nativity with the corresponding population as given by the census of 1890.

The death-rate was 9 per 1,000 higher among males than among females. The death-rate of the colored population was much greater than that of the white population, exceeding it in the ratio of 15.3 to 10.4. The highest death-rate was in the case of "black" inhabitants, 24.7 per thousand; next to which comes that of the Indians, 17.1. The fact that the death-rate of mulattoes is reported lower than that of the pure black population, is probably due to the careless registration of many mulatto decedents as "black." The census carefully distinguished the different shades of color. No deaths of Chinese or Japanese, of which the State contained a total of 112 in 1890, were reported.

The native-born inhabitants show a higher death-rate than the foreign born in the table, but no conclusions can be drawn directly from this statement as the large infantile mortality included in deaths of native-born persons raises the death-rate of the native born inhabitants higher than it would otherwise be. In cases where a large number of persons at the ages which furnish the highest mortality-rates are included in the nation, while the foreign-born have a smaller number of adults, would be expected to show a low death-rate. More satisfactory conclusions can be drawn from the study of Table 63, in which the number of deaths of each nativity is compared with the respective populations of the same ages.

Table 63 shows the details concerning death for each nativity in the State which have been discussed in the aggregate in the preceding table.

Table 64 makes comparison of the per cent of deaths of different nativities in 1901 with recent years, and also with the ten-year average. The per cent of deaths of the native-born inhabitants is less than the average while that of foreign-born inhabitants is greater, corresponding to the increase in the proportion of foreigners in the State. In Table 65 the number of deaths of each nativity is shown for each nativity of the State.

TABLE 62.—Comparison, by sex, color and nativity, of the deaths returned for 1891 with the population in 1890.

Color, race and nativity.	Sex.	Population by U. S. census of 1890.	Number of deaths returned 1891.†	Death rate per 1,000 of population of same color, sex and nativity.	Per cent of deaths of each sex to total of both sexes.	Per cent of deaths of each color and nativity to total deaths by sexes.
All colors and nativities.....	Total.....	2,093,889	22,079	10.5	100.0	100.0
	Males.....	1,091,780	11,908	10.9	53.9	100.0
	Females.....	1,002,109	9,998	10.0	45.3	100.0
	Unknown.....		173		.8	
White.....	Total.....	2,072,884	21,616	10.4	100.0	97.9
	Males.....	1,080,717	11,708	10.8	54.1	98.3
	Females.....	992,167	9,887	9.9	45.5	98.4
	Unknown.....		76			.4
Colored.....	Total.....	21,005	312	16.8	100.0	1.5
	Males.....	11,063	192	17.4	56.1	1.0
	Females.....	9,942	143	14.4	43.8	1.0
	Unknown.....		7		2.1	
Colored. { Black..... Mulatto*..... Indian..... Asiatic†.....	Total.....	7,086	174	24.7		
	Total.....	8,187	72	8.8		
	Total.....	5,624	96	17.1		
	Total.....	158				
Native-born.....	Total.....	1,550,009	16,387	10.5	100.0	78
	Males.....	790,708	8,606	10.8	53.0	72
	Females.....	759,306	7,581	9.1	46.5	75
	Unknown.....		100		.5	57
Foreign-born.....	Total.....	543,870	4,811	8.8	100.0	21
	Males.....	301,077	2,748	9.1	57.1	22.1
	Females.....	242,808	2,062	8.5	42.9	20.6
	Unknown.....		1			.6

* Includes 1,376 quadroons and 1,222 octoroons.

† Includes 120 Chinese and 38 Japanese.

‡ Includes in "all colors and nativities" 121 decedents of unknown color, and 961 decedents of unknown nativity.

DEATHS BY COUNTIES, BY COLOR BY SEX.

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TABLE 63.—*Exhibiting, by number and by sex, for the State and counties, the color of decedents, returned for the year 1891.*

State and counties.	All colors, 1891.				White.				Black.			Mulatto.			Indian.			Un-known.		
	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Unknown.
State	22,079	11,908	9,998	173	21,916	11,708	9,887	76	174	97	71	6	72	35	36	1	96	60	36	121
Alcona	25	12	13	—	25	12	13	—	—	—	—	—	—	—	—	—	—	—	—	—
Alger	2	2	—	—	2	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Allegan	455	248	202	5	449	244	201	4	—	—	—	—	4	3	1	—	—	2	1	1
Alpena	150	83	67	—	150	83	67	—	—	—	—	—	—	—	—	—	—	—	—	—
Antrim	76	39	35	2	71	38	32	1	—	—	—	—	—	—	—	—	—	5	1	3
Arenac	31	16	15	—	30	16	14	—	—	—	—	—	—	—	1	1	—	—	—	—
Baraga	88	22	16	—	33	21	12	—	—	—	—	—	—	—	5	1	4	—	—	—
Barry	181	108	72	1	178	105	72	1	—	—	—	—	3	3	—	—	—	—	—	—
Bay	534	286	248	—	532	286	246	—	—	—	—	—	—	—	—	—	2	—	2	—
Benzie	58	27	31	—	58	27	31	—	—	—	—	—	—	—	—	—	—	—	—	—
Berrien	322	167	153	2	311	164	147	—	6	1	5	—	3	2	1	—	—	2	—	2
Branch	261	144	116	1	260	143	116	1	1	1	—	—	—	—	—	—	—	—	—	—
Calhoun	355	208	147	—	348	204	144	—	3	2	1	—	—	—	4	2	2	—	—	—
Cass	151	82	69	—	143	78	65	—	1	1	—	—	7	3	4	—	—	—	—	—
Charlevoix	73	41	32	—	72	40	32	—	—	—	—	—	1	1	—	—	—	—	—	—
Cheboygan	90	49	41	—	90	49	41	—	—	—	—	—	—	—	—	—	—	—	—	—
Chippewa	79	46	32	1	78	46	32	—	—	—	—	—	—	—	—	—	1	—	1	—
Clare	61	27	34	—	61	27	34	—	—	—	—	—	—	—	—	—	—	—	—	—
Clinton	218	110	108	—	218	110	108	—	—	—	—	—	—	—	—	—	—	—	—	—
Crawford	9	7	2	—	9	7	2	—	—	—	—	—	—	—	—	—	—	—	—	—
Delta	172	108	62	2	172	108	62	2	—	—	—	—	—	—	—	—	—	—	—	—
Dickinson	224	147	74	3	224	147	74	3	—	—	—	—	—	—	—	—	—	—	—	—
Eaton	334	156	177	1	334	156	177	1	—	—	—	—	—	—	—	—	—	—	—	—
Emmet	117	62	52	3	82	41	38	3	—	—	—	—	—	—	—	35	21	14	—	—
Genesee	384	192	192	—	377	188	189	—	6	3	3	—	1	1	—	—	—	—	—	—
Gladwin	6	3	3	—	6	3	3	—	—	—	—	—	—	—	—	—	—	—	—	—
Gogebic	232	92	63	77	143	85	56	2	—	—	—	—	—	—	—	—	89	7	7	75
G'd Traverse	164	98	66	—	160	98	62	—	4	—	4	—	—	—	—	—	—	—	—	—
Gratiot	201	108	93	—	200	108	92	—	—	—	—	—	—	—	—	—	1	—	1	—
Hillsdale	291	141	148	2	291	141	148	2	—	—	—	—	—	—	—	—	—	—	—	—

TABLE 63.—CONTINUED.—Deaths by counties, by color, by sex.

Counties.	All colors, 1891.				White.				Black.			Mulatto.			Indian.			Un- known.		
	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Totals.	Males.	Females.	Totals.	Males.	Females.	Totals.	Males.	Females.
Houghton.....	490	282	207	1	490	282	207	1												
Huron.....	217	114	103		217	114	103													
Ingham.....	407	205	202		393	196	197		10	5	5	1	1					3	3	
Ionia.....	235	115	118	2	235	115	118	2												
Iosco.....	149	83	66		148	82	66		1	1										
Iron.....																				
Isabella.....	161	85	76		149	76	73					1	1		11	9	2			
Ile Royal.....																				
Jackson.....	403	213	190		400	212	188		2	1	1	1	1							
Kalamazoo.....	446	238	207	1	437	233	203	1	5	3	2	4	2	2						
Kalkaska.....	56	26	30		56	26	30													
Kent.....	1,239	679	545	12	1,218	672	542	4	12	7	5							9	1	
Keweenaw.....	75	39	36		75	39	36													
Lake.....	19	12	7		19	12	7													
Lapeer.....	223	115	108		223	115	108													
Leelanau.....	62	30	32		50	24	26								12	6	6			
Lenawee.....	465	244	220	1	460	240	220		4	4								1		
Livingston.....	194	98	96		193	97	96		1	1										
Luce.....	9	6	3		9	6	3													
Mackinac.....	17	10	7		13	8	5								4	2	2			
Macomb.....	334	167	167		333	167	166											1		
Manistee.....	288	167	121		288	167	121													
Manitou.....	10	6	4		10	6	4													
Marquette.....	608	365	243		604	362	242		2	2					1	1		1		
Mason.....	178	99	79		177	98	79													
Mecosta.....	163	98	65		161	96	65		2	2					1	1				
Menominee.....	144	81	62	1	144	81	61	1												
Midland.....	98	45	53		98	45	53													
Missaukee.....	41	27	14		41	27	14													
Monroe.....	307	173	133	1	303	170	132	1	3	3					1	1				
Montcalm.....	251	130	121		248	129	119		1	1		2	2							
Montmorency.....	7	1	6		7	1	6													
Muskegon.....	432	231	196	6	432	231	196	6												
Newaygo.....	139	79	60		135	77	58		2	2					2	2				
Oakland.....	399	208	191		396	208	188		2	2	1	1	1							
Oceana.....	131	69	62		130	68	62								1	1				

a One male white and Indian.

DEATHS BY COUNTIES, BY COLOR, BY SEX.

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TABLE 63.—CONCLUDED.—Deaths by counties, by color, by sex.

Counties.	All colors, 1891.				White.				Black.			Mulatto.			Indian.			Un- known.			
	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Unknown.	
Ogemaw.....	29	16	13	.....	29	16	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ontonagon.....	20	13	7	.....	20	13	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Osceola.....	135	71	64	.....	131	68	63	.....	1	1	.....	1	1	.....	2	2	.....	.....	.....	.....
Oscoda.....	6	4	2	.....	6	4	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Otsego.....	41	27	13	1	41	27	13	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ottawa.....	316	181	135	.....	312	179	133	.....	2	1	1	.....	1	1	.....	1	1	.....	.....	.....
Presque Isle.....	41	22	19	.....	41	22	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Roscommon.....	6	4	2	.....	6	4	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Saginaw.....	931	500	431	.....	921	493	428	.....	1	1	.....	.....	.....	.....	8	5	3	.....	1	1
Sanilac.....	269	136	131	2	268	136	131	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1
Schoolcraft.....	32	22	10	.....	31	21	10	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....
Shiawassee.....	194	111	82	1	193	111	81	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1
St. Clair.....	530	281	249	.....	529	281	248	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....
St. Joseph.....	274	146	128	.....	273	146	127	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....
Tuscola.....	221	115	106	.....	219	113	106	.....	.....	.....	.....	.....	.....	.....	2	2	.....	.....	.....	.....
Van Buren.....	276	129	143	4	271	125	142	4	2	2	.....	3	2	1	.....	.....	.....	.....	.....	.....
Washtenaw.....	401	222	179	.....	385	215	170	.....	4	2	2	12	5	7	.....	.....	.....	.....	.....	.....
Wayne.....	4,594	2,501	2,054	39	4,470	2,435	2,003	32	95	52	37	6	24	10	13	1	4	4	1	1
Wexford.....	72	36	35	1	71	35	35	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

TABLE 64.—Nativity of decedents in Michigan for the years 1889-1891, and the average for ten years, 1881-1890.

Nativity of decedents.	Deaths, 1889.		Deaths, 1890.		Deaths, 1891.		Average for 10 years, ending with 1890.	
	Number.	Per cent of total.	Number.	Per cent of total.	Number.	Per cent of total.	Number.	Per cent of total.
All nativities.....	20,315	100.0	21,642	100.0	22,079	100.0	18,866	100.0
Native-born.....	15,171	74.7	15,890	73.4	16,287	73.7	14,422	76.4
Foreign-born.....	4,405	21.7	4,908	22.7	4,811	21.8	3,833	20.3
Unknown.....	739	3.6	844	3.9	981	4.5	611	3.3

VITAL STATISTICS OF MICHIGAN, 1891.

BLE 65.—*Exhibiting, by number and by sex, for the State and counties, the nativity of decedents returned for the year 1891.*

State and counties.	All nativities, 1891.				Native.				Foreign.				Unknown.		
	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.
State	22,079	11,908	9,998	173	16,287	8,606	7,581	100	4,811	2,748	2,062	1	981	554	355
Alcona	25	12	13	---	11	7	4	---	14	5	9	---	---	---	---
Alger	2	2	---	---	2	2	---	---	---	---	---	---	---	---	---
Allegan	455	248	202	4	352	188	159	5	93	56	37	---	10	4	6
Alpena	150	83	67	---	101	58	43	---	46	22	24	---	3	3	---
Antrim	76	39	35	2	58	33	23	2	17	8	11	---	1	---	1
Arenac	31	16	15	---	21	10	11	---	10	6	4	---	---	---	---
Baraga	38	22	16	---	30	17	13	---	2	1	1	---	6	4	2
Barry	181	108	72	1	146	88	57	1	30	17	13	---	5	3	2
Bay	534	286	248	---	375	206	169	---	150	74	76	---	9	6	3
Benzie	58	27	31	---	45	20	25	---	11	7	4	---	2	---	2
Berrien	322	167	153	2	266	136	128	2	39	22	17	---	17	9	8
Branch	261	144	116	1	223	118	104	1	22	12	10	---	16	14	2
Calhoun	355	208	147	---	282	166	116	---	63	36	27	---	10	6	4
Cass	151	82	69	---	136	70	66	---	10	7	3	---	5	5	---
Charlevoix	73	41	32	---	52	29	23	---	16	10	6	---	5	2	---
Cheboygan	90	49	41	---	67	36	31	---	21	11	10	---	2	2	---
Chippewa	79	48	32	1	38	22	16	---	35	20	14	1	6	4	---
Clare	61	27	34	---	51	24	27	---	9	2	7	---	1	1	---
Clinton	218	110	108	---	185	93	92	---	31	16	15	---	2	1	---
Crawford	9	7	2	---	7	5	2	---	2	2	---	---	---	---	---
Delta	172	108	62	2	125	74	49	2	44	33	11	---	3	1	---
Dickinson	224	147	74	3	129	72	54	3	93	74	19	---	2	1	---
Eaton	334	156	177	1	286	135	150	1	35	17	18	---	13	4	---
Emmet	117	62	52	3	98	52	43	3	13	5	8	---	6	5	---
Genesee	334	192	192	---	319	152	167	---	55	33	22	---	10	7	---
Gladwin	6	3	3	---	2	---	2	---	4	3	1	---	---	---	---
Gogebic	232	92	63	77	103	47	49	7	38	32	6	---	91	1	---
Gd. Traverse	164	98	66	---	117	65	52	---	41	28	13	---	6	---	---
Gratiot	201	108	93	---	183	98	85	---	15	10	5	---	3	---	---
Hillsdale	291	141	148	2	260	126	132	2	22	10	12	---	9	---	---

DEATHS BY COUNTIES, BY NATIVITY AND BY SEX. 181

TABLE 65.—CONTINUED.—Deaths by counties, by nativity, and by sex.

Counties.	All nativities, 1891.				Native.				Foreign.				Unknown.			
	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Unknown.
Houghton	490	282	207	1	367	202	164	1	122	79	43		1	1		
Huron	217	114	103		124	66	58		91	48	43		2		2	
Ingham	407	205	202		331	160	171		54	29	25		22	16	6	
Ionia	235	115	118	2	191	91	98	2	39	21	18		5	3	2	
Iosco	149	83	66		109	58	51		28	21	7		12	4	8	
Iron																
Isabella	161	85	76		134	68	66		24	15	9		3	2	1	
Iale Royal																
Jackson	403	213	190		348	185	163		44	23	21		11	5	6	
Kalamazoo	446	238	207	1	334	180	153	1	86	47	39		26	11	15	
Kalkaska	56	26	30		48	23	25		6	3	3		2		2	
Kent	1,239	679	548	12	903	472	420	11	251	145	106		85	62	22	1
Keweenaw	75	39	36		58	29	29		17	10	7					
Lake	19	12	7		16	10	6						3	2	1	
Lapeer	223	115	108		166	81	85		50	27	23		7	7		
Leelanau	62	30	32		46	21	25		14	8	6		2	1	1	
Lenawee	465	244	220	1	353	183	169	1	58	35	23		54	26	28	
Livingston	194	98	96		159	76	83		33	22	11		2		2	
Luce	9	6	3		7	4	3		2	2						
Mackinac	17	10	7		10	7	3		5	2	3		2	1	1	
Macomb	334	167	167		252	132	120		80	34	46		2	1	1	
Manistee	288	167	121		230	137	93		52	26	26		6	4	2	
Manitou	10	6	4		3	2	1		7	4	3					
Marquette	608	305	243		332	176	176		255	189	66		1		1	
Mason	178	99	79		133	74	59		44	24	20		1	1		
Mecona	163	98	65		113	63	45		43	23	20		7	7		
Menominee	144	81	62	1	118	63	54	1	25	17	8		1	1		
Midland	98	45	53		74	33	41		22	10	12		2	2		
Missaukee	41	27	14		29	19	10		9	7	2		3	1	2	
Monroe	307	173	133	1	243	135	107	1	54	29	25		10	9	1	
Montcalm	251	130	121		202	107	95		36	18	18		13	5	8	
Montmorency	7	1	6		4	1	3		3		3					
Muskegon	432	231	195	6	322	170	146	6	108	58	45		7	3	4	
Newaygo	139	79	60		120	66	54		18	12	6		1	1		
Oakland	399	208	191		302	156	146		90	48	42		7	4	3	
Oshtemo	131	69	62		107	58	49		18	8	10		6	3	3	

TABLE 65.—CONCLUDED.—Deaths by counties, by nativity, and by sex.

Counties.	All nativities, 1891.				Native.				Foreign.				Unknown.			
	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Unknown.	Totals.	Males.	Females.	Unknown.
Ogemaw.....	29	16	13	—	19	14	5	—	8	2	6	—	2	—	2	—
Ontonagon.....	20	13	7	—	10	7	3	—	9	6	3	—	1	—	1	—
Osceola.....	135	71	64	—	99	44	55	—	35	26	9	—	1	1	—	—
Oscoda.....	6	4	2	—	6	4	2	—	—	—	—	—	—	—	—	—
Otsego.....	41	27	13	1	34	22	11	1	5	3	2	—	2	2	—	—
Ottawa.....	316	181	135	—	231	124	107	—	76	52	24	—	9	5	4	—
Presque Isle.....	41	22	19	—	28	15	13	—	13	7	6	—	—	—	—	—
Rosecommon.....	6	4	2	—	3	3	—	—	3	1	2	—	—	—	—	—
Saginaw.....	931	500	431	—	702	381	321	—	219	112	107	—	10	7	3	—
Sanilac.....	269	136	131	2	163	82	80	1	108	54	49	—	3	—	2	1
Schoolcraft.....	32	22	10	—	18	11	7	—	13	10	3	—	1	1	—	—
Shiawassee.....	194	111	82	1	162	92	69	1	28	15	13	—	4	4	—	—
St. Clair.....	530	281	249	—	325	172	153	—	191	101	90	—	14	8	6	—
St. Joseph.....	274	146	128	—	209	108	101	—	38	22	16	—	27	16	11	—
Tuscola.....	221	115	106	—	161	86	75	—	56	28	28	—	4	1	3	—
Van Buren.....	276	129	143	4	234	113	117	4	20	10	10	—	22	6	16	—
Washtenaw.....	401	222	179	—	268	142	126	—	93	58	35	—	40	22	18	—
Wayne.....	4,594	2,501	2,054	39	3,181	1,696	1,446	39	1,125	615	510	—	288	190	98	—
Wexford.....	72	36	35	1	56	28	27	1	12	5	7	—	4	3	1	—

Table 66 concludes the list of tables referring especially to occurrence of deaths with a statement of the relative number of deaths of each nativity for each period of age. The periods are arranged according to data supplied by the United States Census Bureau. For the purpose of direct comparison the number of deaths for the corresponding periods of 1890 are taken from the Registration Report of that year.

In stating the ratios for 1891 no allowance is made for increase of population, and, consequently, the rates will be found to be a little too high. Accordingly, when the rate for 1891 appears lower than the corresponding rate for 1890, a marked decrease may be considered to have taken place. This is the case with decedents, both of native and foreign birth, between the ages of five and twenty. For those above twenty-five years of age, and especially for all above sixty-five, the death-rate is much higher in 1891.

As regards nativity, the death-rate appears to be higher for the native-born than for the foreign-born until the middle period of life is passed, when the reverse holds true.

The numbers representing the decedents of foreign nativity are small for the early years of life and probably no reliable conclusions can be drawn without more extended investigation. The subject is worthy of more thorough study than has hitherto been accorded it, and as a preliminary step the vague and indefinite term "foreign-born" should be rejected and a detailed study be made by separate nationalities. The changes in vital rates consequent on the transplantation of German, Scandinavian and English stocks upon this soil are of far more importance than questions relating to the number of significant colored population of the State.

DEATHS AND POPULATION BY PERIODS OF AGE.

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TABLE 68.—Comparison of deaths in 1890 and 1891 with population of same nativity and periods of age in 1890.

Ages in periods of years.	Population at each period of age, U. S. census of 1890.			Deaths at each period of age, 1890.			Deaths by each period of age, 1891.			Rates per 1,000 of deaths in 1890 to population of same age and nativity, 1890.			Rates per 1,000 of deaths in 1891 to population of same age and nativity, 1890.		
	Total.	Native.	Foreign.	Total.	Native.	Foreign.	Total.	Native.	Foreign.	Total.	Native.	Foreign.	Total.	Native.	Foreign.
All ages	2,068,889	1,532,288	541,601	21,642	15,824	4,908	22,079	16,287	4,811	10.3	10.2	9.1	10.5	10.5	8.9
Under 5	237,339	230,632	6,757	7,849	7,537	266	7,665	7,415	151	33.1	32.7	36.4	32.3	32.3	22.3
5 to 10	237,465	218,614	18,851	1,064	964	90	985	914	90	4.6	4.5	4.8	4.1	4.2	2.7
10 to 15	220,227	187,817	32,410	621	524	75	556	468	60	2.8	2.8	2.3	2.5	2.6	1.9
15 to 20	205,631	169,945	35,686	783	614	144	740	562	120	3.6	3.6	4.0	3.6	3.5	2.3
20 to 25	202,439	147,350	55,139	907	—	—	1,023	701	286	4.5	—	—	5.1	4.8	5.3
25 to 30	178,548	114,240	64,308	918	—	—	849	584	261	5.1	—	—	4.8	4.8	4.1
(20 to 30)	331,087	261,590	119,447	1,825	1,208	536	1,872	1,255	547	4.8	1.6	4.5	4.9	4.8	4.6
30 to 35	162,764	103,964	58,800	812	—	—	779	479	255	5.0	—	—	4.8	4.6	4.3
35 to 45	250,815	149,955	100,860	1,496	—	—	1,442	810	553	6.0	—	—	5.7	5.4	5.5
45 to 55	184,925	106,708	79,219	1,369	—	—	1,439	778	607	7.4	—	—	8.1	7.4	7.7
55 to 65	117,452	65,620	51,832	1,626	—	—	1,740	872	757	13.8	—	—	14.8	13.8	14.6
(All over 30)	807,713	480,267	327,446	9,167	4,831	3,724	9,805	5,339	3,801	11.3	40.6	11.4	12.1	11.1	11.6
All over 65	92,257	55,062	37,925	3,864	—	—	4,355	2,400	1,629	41.9	—	—	47.3	43.6	48.8
Unknown	4,427	3,423	1,004	302	128	78	456	289	83	82.3	87.4	72.7	103.0	84.4	81.7

* Figures on population kindly furnished by Acting Superintendent of the Census, T. H. Wardle, in advance of publication by the Census Bureau. Among the persons included 21,005 colored persons (black, Mulatto, Indian, Chinese and Japanese) of whom 2,279 were of foreign birth. The resulting error is quite insignificant.

includes 844 persons of unknown nativity and 66 persons of unknown sex not included in the two following columns.

includes 941 persons of unknown nativity not included in the two following columns.

SECTION II.—CAUSES OF DEATH IN MICHIGAN DURING THE YEAR 1891.

Before entering upon the tabular discussion of Causes of Death, it will be well to obtain a general idea of the relative importance and actual magnitude of the diseases which principally affect the death-rate in this State. This can most readily be done by an inspection of Diagram II. which graphically represents the average annual number of deaths per 100,000 inhabitants during the five-year period, 1886-90, according to the returns in this State, for thirty-two leading causes and conditions of death.

EXPLANATION OF DIAGRAM II.

For the proper understanding of Diagram II. several facts should be taken into consideration:

(1) In order to place consumption, pneumonia, heart diseases, etc., on the diagram without reducing the scale to such a degree that the finer distinctions between other diseases disappear, the bars representing the above causes of death are drawn of *double* width (in the case of consumption of *triple* width) and, consequently, the area as well as the length should be considered in making comparisons.

(2) The diagram represents the death-rates according to the *returns*. It has been pointed out that these returns are defective, a large number of deaths yearly escaping registration. It is clearly brought out in a following table (No. 77) that these figures require to be multiplied by nearly 100 per cent to make them comparable with the corresponding rates of states or countries having more accurate systems of registration. However, as regards the comparison of these rates calculated from the returns of different diseases with each other, the case is different. It may be assumed, though not with entire truth, that the defects of registration affect one disease in the same proportion as another. Consequently these rates, symbolized by the bars of corresponding dimensions, may be depended upon as a correct showing of the relative, though not the actual, mortality in Michigan for the period in question from these various causes.

(3) The period for which the diagram was constructed (1886-90), though a fairly typical period in most respects, has certain peculiarities which should be noted. These can be seen in the comparison with preceding periods made in Table 76. Influenza appears as a disease of great importance, standing between scarlet fever and measles as a cause of death, with a rate of 12.9 per 100,000. This high rate was mainly due to the large number of deaths recorded for the year 1890. As shown in the outlined bar, the average for the two years 1890-91, was 51.2 per 100,000, more than occurred from diphtheria or heart diseases, which ordinarily stand next to consumption and pneumonia as agents of death. Of course this was quite exceptional and depended upon the presence of the disease as an epidemic; the mortality for previous five-year periods is very low—.5 to .6 per 100,000 per annum.

(4) For the zymotic diseases as a class the method of study by individual years may be said to be more satisfactory than that of comparing the averages of five-year periods. For example the rate for scarlet fever, diagrammed as 14.2 deaths per 100,000 for the period 1886-90, is very low as compared with the averages of preceding five-year periods. The rate for the year 1891 rises suddenly to 18.7 deaths per 100,000. Allowance should therefore be made in comparing the rates for diseases liable to great and sudden variation for the possible occurrence of years of diminished or excessive prevalence in the period averaged. Diseases like consumption, pneumonia, cancer, paralysis, and the like, pursue a much more uniform course, and, accordingly, the five-year averages may be accepted as correct representations of their values.

(5) The large number of deaths for which no cause is returned or else some more or less indefinite statement is given should be noted. Deaths amounting to 66.7 per 100,000, more than those from any single disease except consumption, were given as "unknown and unclassified." These are not represented in the diagram but attention is called to some other almost as unsatisfactory causes of death, which, on account of their large number, are represented in it. These are "dropsy," "convulsions," the large number of "heart failures" in heart diseases,—symptoms associated with fatal diseases, but which should not be returned as causes of death; and the list of deaths from "teething" and "old age," terms which suggest the period of life of the decedents rather than the particular diseases that proved fatal. Many returns are also made of "lung disease," "stomach disease," etc., specifying the part affected but not the form of disease causing death. Such indefinite categories are included in the lists of local diseases in the tables following and reach no inconsiderable proportions, but, on account of their indefinite character are not included in the diagram.

WHAT DOES THE DIAGRAM SHOW?

In a general way the points of principal importance brought out by a study of Diagram II. may be stated as follows:

(1) Consumption (the long *triple* bar) is vastly more important as a cause of death than any other single disease, or, indeed, than any two diseases combined. It is equal to nearly one-half of the total mortality from zymotic diseases. The aggregate number of deaths from pneumonia and diphtheria, or from pneumonia and heart diseases, is less than the number due to this single cause. Large as the total is, averaging 2,224 deaths per annum, it should be materially increased to show the actual number of deaths from *tuberculosis*, of which pulmonary consumption is the most important form. This disease is classed, according to the old nosology employed in this Report as well as in most others, with the "constitutional" diseases, whereas its true place is among the specific infectious or "zymotic" diseases. Health boards are only beginning to grapple with the proper restriction of this disease, a task of special difficulty on account of its wide prevalence and the absence of the precautions which fear of the more violent forms of infectious diseases causes the community to adopt.

Three other diseases are of such magnitude as to require doubling of their bars in order to reduce them to the limit of the diagram. These are, in order, pneumonia, heart diseases and diphtheria.

(2) The death-rate from pneumonia, which also has claims to be considered an infectious disease, although very closely dependent on meteorological conditions for its

prevalence, is decidedly larger than the rates for the periods 1831-85 and 1876-90, but less than for 1871-75 and for the year 1891.

(3) Diphtheria and croup are now generally classed together, opinion inclining to the belief that the differential diagnosis is often impossible. The aggregate is 70.2 deaths per 100,000, more than from any other cause of death, excepting only consumption. Large as the number is for diphtheria (48.8), it is much less than the rates for the preceding periods, 1881-85 and 1876-90, for which the figures are 74.5 and 62.2 respectively. It is probable that the efficient methods of restriction adopted by the State Board of Health have much to do with the diminution of the mortality in Michigan from this disease. In England it has increased steadily during the past twenty years (see Table 77), and in Massachusetts the mortality has remained nearly stationary since 1882.

(4) Heart disease, or, rather, heart diseases, since there are many special forms included in the general term, is a group that has come into unusual prominence in recent years. Table 77 shows that there were over twice as many deaths from heart diseases returned for the period 1886-90 in Michigan as for the period 1871-75. An increase nearly as great occurred in Massachusetts during the same time, and in England the increase, though less marked, was still considerable.

A large number of cases of "heart failure" are included with heart diseases for the years previous to 1891. There were 375 deaths so returned for 1891 as compared with a total of 502 from various actual forms of heart disease. Probably in the great majority of the deaths so returned the statement is simply equivalent to a return of unknown cause, and implies no cardiac disease.

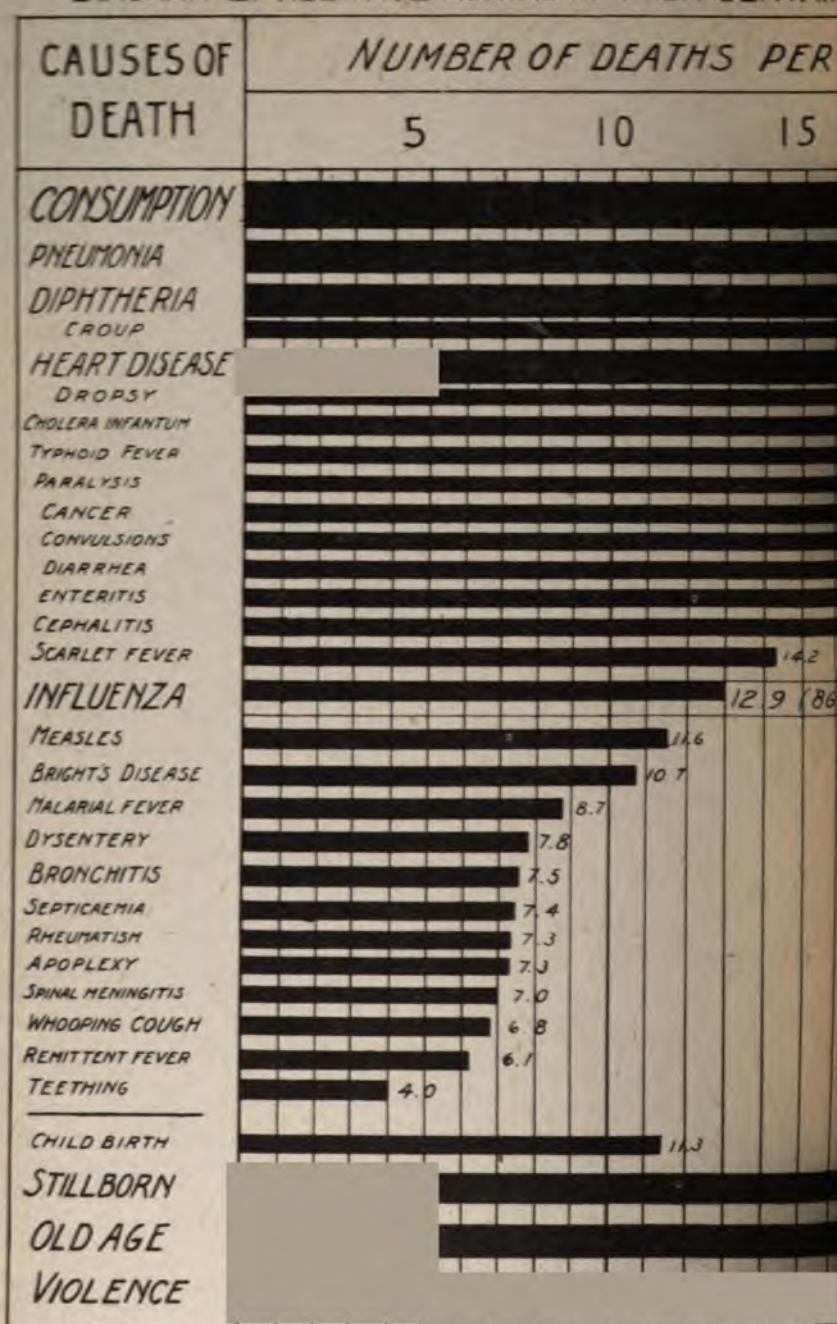
(5) From cholera infantum to "teething" the list in the order printed in the margin gives a fair idea of the relative importance of the different diseases as causes of death, the decrease being quite uniform. Remarks on these diseases are reserved until after the presentation of Table 76 which shows the changes in the number of deaths caused by them for several consecutive periods. That table will also show why some diseases, like small-pox, are entirely omitted from the diagram, the mortality caused by them having become quite insignificant.

RATES PER 1,000 DEATHS FROM KNOWN CAUSES.

It will be observed that the total number of deaths from specified causes per 100,000 population was, for the period represented in Diagram II., 949.9. Were the number exactly 1,000, as the total number of deaths including unknown causes very nearly is (1,012.5), the numbers representing the rates for each disease per 100,000 population would also represent the number of deaths per 1,000 from known causes, a ratio frequently used in works on mortality. To obtain these rates it is only necessary to divide the numbers stated for each division in the diagram by .9499. This has been done for certain diseases for the purpose of comparing the rates so obtained for Michigan for the period 1886-90 with those given for the entire United States in 1880. A general correspondence will be seen in the order of mortality from the different causes of death in the two series.



DIAGRAM II.-RELATIVE MORTALITY FROM CERTAIN



AVERAGE DEATHS PER ANNUM FROM ALL SPECIFIED CAUSES, 1886-'90, W



DEATHS PER THOUSAND FROM KNOWN CAUSES.

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*Deaths per 1,000 from known causes for certain principal diseases in Michigan, 1886-90, compared with the corresponding rates for the United States as given by the United States census of 1880.**

Causes of death.	Deaths per 1,000 from known causes.	
	Michigan, 1886-90.	United States, 1880.
Consumption.....	116.9	126.3
Still-born.....	60.1	34.6
Pneumonia.....	57.1	87.6
Heart diseases.....	53.8	36.2
Old age.....	51.5	19.7
Diphtheria.....	51.4	58.0
Cholera infantum.....	35.4	34.7
Typhoid fever.....	31.7	31.6
Paralysis.....	23.3	19.3
Cancer.....	24.6	13.2
Convulsions.....	23.4	24.8
Croup.....	22.5	25.0
Diarrhea.....	20.4	15.0
Dropsy.....	19.9	20.5
Enteritis.....	18.1	17.6
Cephalitis.....	18.0	15.1
Scarlet fever.....	14.9	22.8
Malarial fever.....	9.2	23.1
Dysentery.....	8.2	18.7
Bronchitis.....	7.9	15.3
Apoplexy.....	7.7	13.4
Whooping-cough.....	7.2	15.4

* Mortality Report, Tenth Census, Part II, p. xxviii.

As usual the tabular discussion of causes of death is introduced by a list of the tables employed with some hint of the matter contained in each:

Synopsis of tables relating to causes of death.

Tables.	Deaths in Michigan, 1891.
67	Number and per cent of deaths returned from each class of causes (Dr. Farr's classification) in Michigan for the years 1888-91, with average for ten years, 1881-90.
68	Number of deaths returned from each class of causes for each month of the year 1891.
69	Comparison of causes of death, grouped in relation to parts of body affected, for the years 1880-91; ten-year average, 1881-90.
70	Geographical division of the State used in study of causes of death. (Accompanied by Map.)
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Table 67 shows the proportion of deaths that occurred in the year 1891 for each class of diseases. The "classes" referred to are those of the veteran classification introduced by Dr. Farr in 1847 in the English Registration Reports, and which today, although antiquated in many respects, is still more commonly employed than any other in statistics of deaths. It should be understood that the terminology of this system is employed in the present Report purely for convenience, as our present knowledge of many diseases would require quite a different arrangement. From the extra labor involved in bringing up and presenting for comparison a connected series of rates for total deaths and for deaths from special diseases for previous years, in all of which the old system has been employed, no attempt could be made in the present Report to present a more modern and satisfactory classification.

TABLE 67.—*Number of deaths returned from all causes, from each class of causes and the per cent of deaths from each class, to deaths from all causes, for the years 1889-91; average for ten years, 1881-90.*

Causes of death—Classes.	1889.		1890.		1891.		Average for 10 years, 1881-1890.	
	Num-ber.	Per cent of total.	Num-ber.	Per cent of total.	Num-ber.	Per cent of total.	Num-ber.	Per cent of total.
All causes.....	20,315	100.0	21,642	100.0	22,079	100.0	18,866	100.0
I.—Zymotic diseases.....	4,772	23.5	5,627	26.0	5,929	26.9	4,891	25.9
II.—Constitutional diseases.....	3,123	15.4	3,406	15.7	3,390	15.4	3,024	16.1
III.—Local diseases.....	6,459	31.8	6,757	31.2	7,016	31.8	5,700	30.2
IV.—Developmental diseases.....	3,549	17.5	3,149	14.5	2,876	13.0	2,909	15.4
V.—Violent deaths.....	1,096	5.4	1,075	5.0	993	4.5	966	5.1
Unknown and unclassified.....	1,316	6.5	1,628	7.5	1,875	8.5	1,364	7.3

CLASSES OF DISEASES DURING THE DECADE, 1881-90.

In the following remarks in regard to the variations of the several classes of diseases during the past decade, reference is especially made to the first portion of Table 75 where the figures for each year may be found.

The infectious diseases pursue an erratic course from year to year. The years 1890 and 1891 both exceed the average for 1881-90 as also any individual year since 1881. The years from 1882-89 show a low and uniform mortality from this class of causes only broken by the very small number returned for 1885.

Constitutional diseases are, as might be expected, more constant in the yearly number returned than zymotic diseases. There is a slight increase shown through the period corresponding in part to the increase in population and in part to the increased death-rate from cancer. Consumption, the chief constituent of this group, has shown a nearly stationary rate except for 1891, which year was marked by a sharp fall (111.0 per 1,000 for 1886-90 to 97.9 per 1,000, 1891).

Local diseases, a very comprehensive and heterogeneous class, have shown a constant and very uniform amount of increase for the past decade. This is the largest of all the groups, representing nearly one-third of the total deaths, but the very diverse nature

of the diseases included prevents the drawing of any special deductions except that the proportion of organic affections seems to be increasing. As shown by Table 76 the death-rates from nearly all of the orders under this head have increased from 1876 to 1890. These are diseases of the brain and nervous system, heart diseases, diseases of the lungs and of the urinary organs (including increase in death-rates from Bright's disease and from diabetes).

The changes in developmental diseases, especially the sharp climax in 1888 and the decrease for the following years, result chiefly from fluctuations in developmental diseases of children, as may be seen in Table 75, and are due more to differences in methods of compilation than to any actual changes in the facts recorded. The necessity of uniform methods of work from year to year in vital statistics is well illustrated by the line of numbers representing annual deaths from "infantile" diseases in Table 75. This cause of death averages 64 deaths for the five years 1871-75, and only 28 for 1876-80. It is probable that up to 1883, with the exception of 1868, the number of deaths actually marked "infantile" in the returns went under this heading. This is the rule at present (see Table 78 in this Report; 18 deaths returned as "infantile") and probably was used to a variable extent in the preparation for the Report of 1890 for which 127 deaths are so recorded. It is also in accordance with the practice in Massachusetts since 1868.* But in passing from 1883 to 1884 an increase of deaths under this heading may be noted from 103 to 490. It would seem that the Michigan practice had reverted for the years 1884-89 to the discarded Massachusetts usage. In fact many deaths of infants returned from "unknown" cause were compiled as "infantile" for these years, the custom appearing to be to bring those under one month of age under this heading. There is no note or explanation given in relation to such change of practice† in the Reports or of the contrary change in the Report of 1890, and in the absence of such information the present compiler has adopted what seemed to be the preferable course and compiled those deaths for which no cause was assigned as "unknown." As the term "infantile" is scarcely more definite than the term "unknown," the whole matter is concerned more with nomenclature than with practical differences, except that, as pointed out, the *class* of developmental diseases shows some variations that require explanation.

All kinds of deaths from accidents and violence, including homicide and suicide, are included in Class V. The numbers for the ten years exhibit remarkable uniformity, with such slight increase as might be expected from the growth in population. In fact the increase is somewhat in excess of that growth, as appears in Table 76.

There is a large proportion of deaths annually returned for which no cause, or some quite unintelligible one, is assigned. The apparent decrease for the years 1884-89 is explained by the remarks in regard to "infantile diseases," a large number of deaths from unassigned cause having been so classed for those years. The poor quality of the Michigan returns under the present system is shown by comparison with those of Massachusetts. With a registration of over twice as many deaths annually, the number returned from unknown and unspecified causes averaged only 541 for the decade 1881-90. Michigan records over six times as many in proportion to the number of

* "Previous to the adoption, in the Registration Report of 1855, of the present nosological arrangement, the term "infantile" included under a single designation not only all deaths returned under the several heads "infantile," "premature," or "premature births," but also all ascribed to "debility" or "unknown" cause, if under two years of age. * * * Deaths of children under two years from "debility" or "unknown" cause, are no longer [since 1868] classed as "infantile" —Mass. Reg. Rep., 1890, p. 104.

† "The mortality-rate from developmental diseases, those from old age and of infants, was also greater than usual, and was 3.91 per cent greater than the average for ten years." —Mich. Reg. Rep., 1884, p. 139. This is quite what might have been expected from the change of methods.

deaths registered. It is difficult to understand in this connection assertions made in a recent Report* that "every year the returns of the statistics to this office become more complete, thus making the work more accurate and valuable." In fact the evidence shows that there has been little improvement in the numerical amount or the quality of the registration of deaths since its inception.

A system of immediate record, based on burial certificates as far as possible, and one in which the central registration office can come into closer contact with the primary registration officials, thereby permitting rectification of unsatisfactory returns, is as urgently demanded in this State as ever. At present all correspondence relative to corrections passes through the county clerk, who has no immediate knowledge of the facts, to the supervisor, which source of information may be only acquainted with the facts by hearsay and even that after the elapse of over a year from their occurrence. The result of this circuitous and dilatory system appears in the imperfect records, for which it is practically impossible to obtain corrections.

Table 68 studies the distribution of the different classes of diseases through the months of the year. The greatest mortality from all causes occurred in August (2,147 deaths), followed closely by April (2,074 deaths). The high death-rate for August is due, as usual, chiefly to the rise in zymotic diseases, especially cholera infantum. The large number of deaths in April depends in part on the large number of deaths caused by zymotic diseases. The number returned from this class is very much in excess of the usual number for this season of the year on account of the mortality from influenza. But local diseases are in even greater measure responsible for the increase of deaths in the spring of 1891. How far these various affections of the heart, respiratory and nervous systems may be accounted indirect effects of the epidemic of influenza that prevailed in this and the preceding year, is an interesting question. It may be noted in this connection that the number of deaths returned for the spring of 1890, the first year of the epidemic, as due to local affections, was decidedly less than the numbers returned for preceding years.

TABLE 68.—By months, the number of deaths returned in Michigan from all causes and from each class of causes during the year 1891.

Causes of death—Classes.	Year. 1891.	Months of death, 1891.											
		Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
All causes	22,079	1486	1385	1774	2074	1732	1560	1678	2147	1973	2011	1860	2351
I.—Zymotic diseases	5,929	391	327	380	529	359	329	466	742	674	554	482	649
II.—Constitutional diseases.....	3,390	226	215	294	289	307	260	261	291	289	325	287	336
III.—Local diseases.....	7,016	505	491	579	732	613	507	498	585	510	598	606	783
IV.—Developmental diseases.....	2,876	188	184	287	289	247	214	199	249	226	231	234	319
V.—Violent deaths.....	963	68	48	78	84	79	95	94	94	75	88	94	94
Unknown and unclassified.....	1,875	108	120	156	151	127	155	160	186	199	175	157	170

*Michigan Registration Report, 1889. Letter of transmittal, p. vii.

Table 69 exhibits quite a different basis of classification, the diseases being grouped in relation to the part of the body affected. Diseases of the lungs came first in 1891 as in the preceding years represented and also in the average for ten years, 1881-90. The per cent of total deaths is nearly twice as great as the next group of causes of mortality, diseases of the bowels. Diseases of the brain and diseases of the throat show a decline, while those of the heart and kidneys show an increase as compared with the average.

TABLE 69.—Order of seven groups of causes of death arranged according to the part of the body affected, returned for the years 1889-91; and the average for ten years, 1881-90.

1889.			1890.			1891.			Average for 10 years, 1881-1890.		
Part affected.	No.	Per cent to all causes.	Part affected.	No.	Per cent to all causes.	Part affected.	No.	Per cent to all causes.	Part affected.	No.	Per cent to all causes.
All causes.	20,815	100.0	All causes.	21,842	100.0	All causes.	22,779	100.0	All causes.	18,866	100.0
Lungs.....	3,893	18.2	Lungs.....	3,804	17.6	Lungs.....	3,786	17.1	Lungs.....	3,591	19.0
Bowels.....	2,066	10.1	Bowels.....	2,313	10.7	Bowels.....	2,114	9.6	Bowels.....	1,698	8.9
Brain.....	1,988	9.8	Brain.....	1,961	9.1	Brain.....	2,009	9.1	Brain.....	2,075	11.0
Throat.....	1,404	6.9	Throat.....	1,481	6.8	Throat.....	1,402	6.3	Throat.....	1,561	8.3
Heart.....	1,065	5.2	Heart.....	1,201	5.5	Heart.....	1,351	6.1	Heart.....	891	4.7
Kidneys.....	454	2.2	Kidneys.....	406	1.9	Kidneys.....	484	2.2	Kidneys.....	379	2.0
Liver.....	378	1.9	Liver.....	111	.5	Liver.....	121	.5	Liver.....	184	1.0
7 groups...	11,048	54.3	7 groups...	11,276	52.1	7 groups...	11,247	51.0	7 groups...	10,379	55.0

In Table 70, which gives the geographical divisions of the State, the new county of Dickinson will be noted in the Upper Peninsular division. It was organized August 1, 1891. For population, see Exhibit G, page 16.

This geographical division of the State has been employed in these Reports since 1870, and much valuable statistical data has been accumulated bearing reference to it. This year a Map is inserted showing the divisions, and also the birth-rates and death-rates of the counties composing them, and in the tables immediately following the distribution of certain classes of diseases and special diseases of importance, is discussed in relation to them.

In Table 71 the population of each geographical division is stated, as estimated with allowance for the increase of one year over the census of 1890 in Exhibit G, page 16. The death-rates, calculated upon this basis, are highest for the Southeastern, Upper Peninsular and Northwestern divisions in order, and lowest for the Northeastern, North-central, Northern and Central divisions.

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GEOGRAPHICAL DIVISIONS.

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peninsular.	western.	eastern.		central.	western.		central.	eastern.
Alger.	Benzie.	Antrim.	Alcona.	Kent.	Clare.	Arezac.	Barry.	Branch.
Baraga.	Gd. Traverse.	Charlevoix.	Alpena.	Lake.	Gladwin.	Bay.	Clinton.	Calhoun.
Chippewa.	Leelanau.	Cheboygan.	Iosco.	Mason.	Isabella.	Huron.	Eaton.	Hilledale.
Della.	Manistee.	Crawford.	Montmorency.	Muskegon.	Mecosta.	Lapeer.	Genesee.	Jackson.
Dickinson.	Manitou.	Emmet.	Ogemaw.	Newaygo.	Midland.	Saginaw.	Gratiot.	Kalamazoo.
Gogebic.	Wexford.	Kalkaska.	Oscoda.	Oceana.	Missaukee.	Sanilac.	Ingham.	Lenawee.
Houghton.		Otsego.	Presque Isle.	Ottawa.	Oscola.	St. Clair.	Ionia.	St. Joseph.
Iron.					Roscommon.	Tuscola.	Livingston.	Washtenaw.
Isle Royal.							Montcalm.	
Keweenaw.							Shiawassee.	
Lac.								
Mackinac.								
Marquette.								
Menominee.								
Ontonagon.								
Schoolcraft.								

The largest death-rate was from the division including the city of Detroit, and was 15.2 per 1,000 population.* Over one-quarter of the total deaths in the State were in this division. It is probable that this difference is not entirely due to an actually greater mortality but to a more thorough registration, even, perhaps, to some extent an over-registration as was the case in births of 1890 in Detroit. Again, the low death-rates shown for the sparsely settled divisions of the upper part of the State are due in part to failure to make a thorough enumeration of deaths. A very large proportion of unknown and indefinite causes is found in these divisions, pointing to a careless and unreliable enumeration. The Northwestern division is the worst in this respect, over one-sixth (17.1 per cent) of the deaths reported having no cause assigned. The Upper Peninsular division follows closely with 15.9 per cent of "unknowns."

The most correct and satisfactory returns are those from the Southeastern and South-central divisions, for which only 5.4 and 5.7 per cent respectively of unknown causes are reported. Even this is far too high a ratio, as has been pointed out on a previous page, but perhaps little additional improvement can be made under the present system of registration which delays the enumeration until many of the facts are forgotten or difficult to ascertain.

TABLE 71.—*Exhibiting by geographical divisions, the number of deaths, the per cent of deaths in 1891 to estimated population in 1891, the per cent of deaths for each division to total deaths for the State, and the per cent of deaths from each class of causes to deaths from all causes.*

State and geographical divisions.	Estimated population in 1891.	Deaths reported, 1891.		Rate per 1,000 of deaths to estimated population, 1891.	Per cent of deaths from each class of causes to deaths from all causes by geographical divisions.					
		Number.	Per cent of total.		Class I.—Zymotic diseases.	Class II.—Constitutional diseases.	Class III.—Local diseases.	Class IV.—Developmental diseases.	Class V.—Violent deaths.	Unknown and undetermined.
State.....	2,130,584	22,079	100.0	10.3	26.9	15.4	31.8	13.0	4.5	8.5
Upper Peninsular.....	190,309	2,142	9.7	11.3	34.5	9.7	19.5	11.6	8.8	15.9
Northwestern.....	65,315	654	3.0	10.0	21.6	11.5	32.4	12.1	5.3	17.1
Northern.....	55,600	462	2.1	8.8	32.3	13.9	24.0	11.5	4.7	13.5
Northeastern.....	52,439	407	1.8	7.7	36.8	12.5	25.5	12.3	6.4	16.5
Western.....	251,528	2,454	11.1	9.8	28.6	14.2	32.7	12.0	4.5	8.0
North-central.....	85,663	671	3.0	7.5	27.5	15.3	25.9	12.7	5.9	12.7
Eastern.....	326,698	2,956	13.4	9.0	26.8	16.0	29.2	13.2	4.8	10.0
Central.....	306,358	2,599	11.8	8.5	23.8	18.1	35.3	12.5	8.9	6.4
Southwestern.....	132,174	1,204	5.5	9.1	25.4	19.5	32.1	12.5	4.2	6.3
South-central.....	302,167	2,396	13.1	9.6	21.6	17.3	40.3	12.0	3.1	5.7
Southeastern.....	371,438	5,634	25.5	15.2	27.7	15.4	33.1	15.1	3.3	5.4

According to the United States census, the death-rate of Detroit for 1890 was about 20 per 1,000.

Passing to the consideration of the relative number of deaths returned from each class of causes in the different divisions, the column showing the per cents of deaths from zymotic diseases is of special importance as an index of sanitary progress in different localities. For the Upper Peninsula over one-third (34.5 per cent) of the total deaths are caused by infectious diseases. Deaths from constitutional diseases (chiefly cancer and consumption) are very low—9.7 per cent and 19.5 per cent respectively. The reason for this appears partly from the very different age-distribution of the population of the Upper Peninsula as compared with the older communities of the southern part of the State. Typhoid fever, cold weather diseases and children's diseases are especially prevalent. Infant mortality is always high and the very high birth-rate of the northern counties would cause a correspondingly large number of deaths of infants and children to be recorded.

The counties that make the most favorable showing in respect to deaths from infectious diseases are those included in the South-central, Central and Northwestern divisions.

It may be noted that in the South-central division, the one making the best showing in the State, the number of deaths from infectious diseases is over one-fifth of the total number. Making allowance for certain diseases, like rheumatism, improperly classed with this group, the field of preventive medicine and sanitation is seen to be still large in this State, even in the most favorable localities.

The local diseases are to some extent the complement of the zymotic diseases. They comprise the numerous organic affections of the brain, heart, respiratory and urinary organs, and it will be noted, cause the most deaths in the South-central and Central divisions and the fewest in the Upper Peninsular division.

From accidents and violent causes of all descriptions the percentage of deaths is markedly higher in the Upper Peninsular (many deaths occur from accidents in mining operations annually) and Northeastern divisions; the smallest numbers are those of the Southeastern and South-central divisions. The South-central division is purely agricultural in character, but it is somewhat surprising that there should be so few casualties reported from the Southeastern division which includes the city of Detroit. Life would seem to be more than ordinarily secure from accident in a large city.

The mortality for certain diseases of special importance is shown in Table 72, the ratio of deaths from each cause to total deaths from all causes being stated. For population of these divisions see preceding table.

For consumption, the highest per cents are those for the Southwestern, Eastern, Central and South-central divisions. The Upper Peninsular, Northeastern and Northwestern show the lowest rates.

Pneumonia stands next to consumption as a cause of death, the rate being a little over one-half as great. The counties showing the largest mortality are those of the Southeastern, Western and South-central divisions; those of least mortality are the Northwestern, Northeastern and Upper Peninsular divisions. It will be noted that this latter group, all northern divisions, is identical with that showing the minimum mortality from consumption.

From influenza the Southwestern, Northeastern and North-central groups reported the largest percentage of deaths; the Upper Peninsular, Northwestern and Southeastern returned the smallest proportion. The great importance of this disease in 1891 is shown by the per cent of total mortality given for the State from this cause, 4.9, which is exceeded only by consumption and pneumonia among the single diseases given in the table.

TABLE 72. - Comparison, by geographical divisions, of the number and percentage of deaths in 1891, from certain specified causes: Consumption, pneumonia, influenza, diphtheria, croup, scarlet fever, typhoid fever, diarrheal diseases.

State and geographical divisions.	Deaths from all causes, 1891.	Consumption.		Pneumonia.		Influenza.		Diphtheria.		Croup.		Scarlet fever.		Typhoid fever.		Diarrheal diseases.*	
		Number of deaths.	Per cent of all causes.	Number of deaths.	Per cent of all causes.	Number of deaths.	Per cent of all causes.	Number of deaths.	Per cent of all causes.	Number of deaths.	Per cent of all causes.	Number of deaths.	Per cent of all causes.	Number of deaths.	Per cent of all causes.	Number of deaths.	Per cent of all causes.
State.....	22,079	2,096	9.5	1,243	5.6	1,076	4.9	1,060	4.8	248	1.3	400	1.8	684	3.1	1,256	5.7
Upper peninsular.....	2,142	132	6.2	96	4.5	49	2.3	105	4.9	50	2.3	79	3.7	150	7.0	158	7.4
Northwestern.....	651	52	8.0	23	3.5	25	3.8	8	1.2	3	.5	10	1.5	17	2.6	40	6.1
Northern.....	462	48	9.3	12	2.6	26	6.1	20	4.3	10	2.2	5	1.1	11	2.4	45	9.7
Northeastern.....	407	32	7.9	15	3.7	33	8.1	3	.7	4	1.0	---	---	10	2.5	28	5.7
Western.....	2,454	282	9.5	153	6.2	122	5.0	164	6.7	81	1.3	27	1.1	70	2.9	153	6.2
North-central.....	671	63	9.4	33	4.9	47	7.0	21	3.1	6	.9	2	.3	13	2.7	60	8.9
Eastern.....	2,936	310	10.5	188	4.6	132	4.5	163	5.5	33	1.1	38	.9	111	3.8	172	5.8
Central.....	2,599	262	10.1	132	5.1	163	6.3	49	1.9	18	.7	31	1.3	76	2.9	146	5.6
Southwestern.....	1,304	149	12.4	59	4.9	99	8.3	20	1.7	11	.9	9	.7	44	3.7	58	4.4
South-central.....	2,806	292	10.1	170	5.9	180	6.3	65	2.2	6	.3	46	1.6	69	2.4	112	3.9
Southeastern.....	5,634	529	9.4	412	7.3	198	3.5	443	7.9	116	2.1	103	2.9	108	1.9	294	5.2

* Includes diarrhoea, dysentery, cholera infantum, cholera (nostrae), cholera morbus.

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typhoid fever shows the highest mortality in the groups which include the larger cities of the State, namely, the Southeastern (Detroit), the Western (Grand Rapids), and the Central (Saginaw, Bay City). The smallest percentage of total deaths occurred in the Eastern, Northwestern, Southwestern and Central groups.

Scarlet fever shows quite a different distribution. The greatest prevalence was in the Upper Peninsular, Northern, and Southeastern divisions; the lowest amount was found in the South-central and Central divisions. In the South-central especially the rate was very low, being only .2 per cent of total deaths.

The year 1891 was a year of unusual prevalence of scarlet fever as compared with the immediately preceding. Four hundred deaths, or 1.8 per cent of the total mortality of the year, was due to this cause. The average number of deaths for the five years preceding, 1886-90, was 284. The counties showing the largest percentage of deaths from this cause are those of the Upper Peninsular and Southeastern divisions. The counties reporting the lowest percentage were the Northeastern (no deaths reported from this cause), North-central and Southwestern divisions.

Typhoid fever ranks high as a cause of death (3.1 per cent) and is quite evenly distributed through the State, except in the case of the Upper Peninsular division (7.0 per cent). Here in some localities it has annually prevailed as an epidemic. The rate is notably low for the Southeastern division (1.9 per cent) which includes Detroit, the lowest per cent returned for any division in the State.

TABLE 73.—Comparison, by geographical divisions, of the number and percentage of deaths returned in 1891 from "old age," and of persons aged over 70 years and under 5 years.

State and geographical divisions.	Deaths at all ages, 1891.	Old age.		Aged 70 and over.		Aged under 5.	
		Number of deaths.	Per cent to deaths at all ages by geographical divisions.	Number of deaths.	Per cent to deaths at all ages by geographical divisions.	Number of deaths.	Per cent to deaths at all ages by geographical divisions.
State	22,079	1,014	4.6	3,309	15.0	7,665	34.7
Upper Peninsular	2,142	30	1.4	68	3.2	1,061	49.5
Western	654	20	3.1	56	8.6	295	45.1
Central	462	18	3.9	43	9.3	202	43.7
Eastern	407	12	2.9	30	7.4	195	47.9
Northwestern	2,434	114	4.6	335	13.6	906	36.9
North-central	671	23	3.4	77	11.5	263	39.2
Southwestern	2,956	151	5.1	386	13.1	1,049	35.9
South-central	2,599	151	5.8	596	22.9	626	24.0
Eastern	1,304	72	6.0	266	22.1	277	23.0
North-central	2,896	187	6.5	803	27.7	544	18.8
Western	5,634	236	4.2	649	11.5	2,247	39.9

The mortality from diarrheal diseases, including in this list diarrhea, dysentery, cholera infantum, cholera (nostras) and cholera morbus, is highest for the Northern and North-central divisions; lowest for the South-central and Southeastern divisions.

The differences in age-constitution of the population in various localities in the State, which largely affects the percentages of mortality from the different diseases and classes of diseases discussed in the two preceding tables, is distinctly brought out in Table 73, which shows the per cents of deaths from "old age" and at the extremes of life in the different divisions.

As "old age" is an indefinite term it is better to consider the percentage of deaths of persons aged over 70 years to total deaths. This was high above the average for the State (15.0 per cent) in the Central, Southwestern and South-central divisions, all located in the southern part of the State, and far below it in the northern divisions, especially in the Upper Peninsular in which the rate was only 3.2 per cent of total deaths.

The order is nearly reversed in the case of deaths of children under five. In the Upper Peninsula nearly one-half (49.5 per cent) of total deaths were at such ages, while the South-central division reports only 18.8 per cent.

CLASSIFIED TABLES OF CAUSES OF DEATH.

The following tables, Nos. 74 to 77 inclusive, may be regarded as the most important exhibits in the Report. They show in condensed form the results of the enumeration of deaths with reference to their causes for the year 1891 and also for each preceding year of registration (Table 75).

In Table 74 the actual number of deaths returned for the year 1891 is given for the State and for each county. In Table 75 comparisons are made between the State totals of classified causes of death as given in the Reports of each year from 1867 to 1891. Five-year averages for fixed periods assist in pointing out the relations of each disease, as given for any particular year, to the course of registration, and also, by substituting a few representative terms in place of a greater number, enable the tendency of each disease to be more readily perceived.

These five-year averages are also utilized in the following table (No. 76) to establish a system of rates per 100,000 population for each cause of death in Michigan during a period of twenty years. Comparisons can thus be made of the number of deaths registered from each cause for successive periods and it can be seen at a glance whether the State is improving or retrograding in the conditions affecting deaths from any particular disease.

For certain infectious diseases it would be more desirable to exhibit the rates for each year instead of the five-year periods given, but the labor incident to the presentation of the facts as stated was sufficient to preclude the possibility of any fuller presentation in the present Report.

Table 74 appears in the same form as in previous years with some minor exceptions. Deaths from chicken-pox are distinguished from deaths returned from small-pox, and the distinction has been carried back through the previous years of registration given in Table 75. It is a matter of little importance except in very recent years when the number of deaths from small-pox has been almost reduced to nil (as was the case in 1887) and it becomes a question of interest as to the complete disappearance of this disease as a cause of death.

In like manner septicemia ("blood poisoning" of the returns), which, as seen in Table 75, may be said to have come into nosological fashion about 1881, has been separated

from erysipelas with which it has been classed in previous Reports. A similar separation was made in the Massachusetts reports about 1880, and the title inserted among the enthetic diseases of Class I.

The other changes deserving mention are the separate enumeration of "heart failure" and heart diseases otherwise specified, and the consideration of tumors in connection with cancer. Probably the majority of deaths returned from "heart failure" should be classed among the indefinite returns as is the custom in Connecticut.*

In England it has been found that a considerable number of deaths returned from "tumor" are changed to "cancer" by correspondence for corrections.† In the classification adopted in the Mortality Report of the Tenth United States Census, tumor and cancer are associated as causes of death, and the propriety of this can scarcely be doubted when the nearly constant relation between the numbers of each returned for a series of years and the correspondence between parts of the body affected by each (see Table 80 a) are considered.‡

* Reg. Rep., 1891, p. 188.

† 52d Annual Report of Registrar-General, 1890, p. ix.

‡ "The reported number of deaths from cancer, and the ratios derived from these in connection with the living population, is undoubtedly too small, if we use the term "cancer" in the ordinary sense, for there is very little doubt that most of the deaths reported as due to tumor might properly have been classed with cancer."—Mortality Report of the Tenth U. S. Census, Part II, p. cxiv.

III.-1. Diseases of nervous system.....	2,334	2	47	10	6	4	1	22	55	5	33	36	44	17	8	6	4	3	17	11	8	43	6	43	
2. Diseases of organs of circulation	1,351	1	30	6	5	2	1	19	26	3	21	26	41	12	5	3	4	8	16	1	4	7	30	1	38
3. Diseases of respiratory organs	1,695	1	32	5	6	2	1	16	30	3	21	20	28	8	2	5	4	5	15	12	22	21	4	23	
4. Diseases of digestive organs.....	1,027	2	24	8	2	3	1	9	25	2	12	9	15	6	4	4	4	6	23	1	6	18	4	23	
5. Diseases of urinary organs.....	516		7	3	4	1		4	12	3	10	9	17	8	3	2			10	1	1	9	4	19	
6. Diseases of generative organs	22																		1						
7. Diseases of organs of locomotion	14														1						1				
8. Diseases of integumentary system.....	57		2						2		1	3	1	1		2			2		1	1		3	
IV.-1. Developmental diseases of children.....	1,284	2	17	3	3	1	5	9	28	6	14	5	19	2	3	3		4	8	24	12	19	2	13	
2. Developmental diseases of women.....	293	1	7	3		1	1	1	9	1	4		1		2	4		1	5	4	2	4	1	3	
3. Developmental diseases of old people	1,014	2	30	4				15	24	3	15	18	19	7	1	3	3	2	6	1	4	2	25	9	
4. Diseases of nutrition	315		6					1	9		5	3	5	2	1	2	1	2	3				2	7	
V.-1. Accident or negligence.....	837		12	6	1	2	2	1	27	4	14	8	4	7	3	6	3	3	7	12	32	5	5	8	
2. Homicide	15								2																
3. Suicide	79		2	1				1	2			1	7	1					2	1		1		1	
4. Other violent deaths	82			1					3		1	1			1				1	1	3		1	2	
CLASS I.—ZYMOTIC	5,929	3	1	127	55	26	6	12	37	137	16	88	61	65	41	17	36	16	17	57	2	48	88	77	
I.—ORDER 1. Miasmatic	5,335	3	1	126	55	26	6	12	36	136	16	87	61	65	41	17	36	16	17	57	2	47	87	76	
1. { Small-pox	1																								
{ Chicken-pox	4											1													
2. Measles	225		1	1	9				6		2		4	2	1		2		2		5	1	4		
3. Scarlet fever	400							2	3	2	2	1	1	1	1				2		2	1	1	5	
4. Diphtheria	1,060		16				2	1	1		1	1	2	4	2	4	14		4	9	12	7	3	6	
5. { Membranous croup	35		2		1							1							1		1		1		
{ Croup	253		4	1			1		3		3	1				5			2		1	1		2	

VITAL STATISTICS OF MICHIGAN, 1891.

TABLE 74.—CONTINUED.—Causes of death, classified.

Causes of death, 1891.	Counties.—Alcona to Gladwin.																			
	State.	Alcona.	Alger.	Allegan.	Alpena.	Antrim.	Arenac.	Baraga.	Barry.	Bay.	Benzie.	Berrien.	Branch.	Calhoun.	Cass.	Charlevoix.	Chesbogan.	Chippewa.	Clare.	Clinton.
6. Quinsy.....	25											1				1				
7. Whooping-cough.....	188			2						4		5		1	1				1	1
Typhoid fever.....	684			9	8			9	11	38	3	18	7	9	8	2		2	1	10
8. Typhus fever.....	7			1																
Typho-malarial fever.....	16														3					
9. Erysipelas.....	86			1	1				2	2			1	1					1	3
Septicæmia.....	172			4	3					7	1	3	2	4	6	1		1		1
10. Puerperal fever.....	85			1											1		1			
11. Carbuncle.....	4																			
12. Infæcna.....	1,076	1	45	20	10	1	11	28	6	22	24	24	11	8				4	4	9
13. Dysentery.....	89			1		1			1	1	1	1	1	2			2		1	2
14. Diarrhea.....	292			3					1	16	2		4	1	2					
15. Cholera infantum.....	799	1	17	13	11	1	8	30	1	19	4	19	4	9	2	4	9	2	3	12
Cholera morbus.....	45			1										1				2		
Cholera.....	31																			
17. Ague.....	132			6		1				1				1				2		
18. Remittent fever.....	105			4	5	1	2	1	1	3		3	1			1				
19. Rheumatism.....	141	1	4			1				2		4	4	1	2		4		1	4
L. Osæna & Entæstic.....	9									1										
1. Syphilis.....	6																			

L. Osæna & Entæstic.

1. Syphilis.

CAUSES OF DEATH, CLASSIFIED.

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[illegible]

TABLE 74.—CONTINUED.—*Causes of deaths, classified.*

Causes of death, 1891.	Counties—Alcona to Gladwin.																									
	Alcona.	Alger.	Allegan.	Alpena.	Antrim.	Arenac.	Baraga.	Barry.	Bay.	Benzie.	Berrien.	Branch.	Calhoun.	Cass.	Charlevoix.	Cheboygan.	Chippewa.	Clare.	Clinton.	Crawford.	Delta.	Dickinson.	Eaton.	Emmet.	Genesee.	Gladwin.
3. Phthisis (consumption of lungs).....	2,096	7	1	49	12	4	1	20	56	3	37	25	38	19	5	4	12	2	18	3	12	11	32	20	42	
4. Hydrocephalus.....	9												1													
5. Marasmus.....	90																									
CLASS III.—LOCAL DISEASES.....	7,016	6	14	32	23	12	4	70	150	16	98	103	146	53	23	20	18	17	84	1	29	45	123	19	148	1
III. ORDER I. NERVOUS SYSTEM.....	2,334	2	47	10	6	4	1	22	55	5	33	36	44	17	8	6	4	3	17		11	8	43	6	42	
1. Cephalitis.....	315		8	4	2	1	1	3	17		2	1	4	1	2	4	2	2			4	3	3		4	
2. Apoplexy.....	213		6						1		5	6	5	3	1	1			3		1	1	6	3	5	
3. Paralysis.....	596		14	1		2		10	5	2	9	13	24	8	3		1		8		1		21	1	15	
4. Insanity.....	49		1					1			1														2	
5. Chorea.....	3																									
6. Epilepsy.....	42				1								1						1						1	
7. Tetanus.....	12							2				1	1													
8. Convulsions.....	547	2	4	2				17			7	2	5	1	2				1		2	4	2		4	
9. { Brain diseases.....	203		2	2	1			5	7	1	4	4	1	8					1		1		4		6	
9. { Droopy of brain.....	18							1	1								1				1					
10. Spinal fever.....	45		1		2			1			1											3	1			
11. Meningitis.....	90							1										1								
12. Meningitis, cerebro-spinal.....	12																								1	
13. Meningitis, spinal.....	84		3	1				1	1	1		6	1								2				1	
14. Diseases of spine.....	107		7	1					3		8	1		1					3				1		1	

CAUSES OF DEATH, CLASSIFIED.

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III. ORDER 8. INTERGUMENTARY SYSTEM.												
1. Phlegmon	48	2	2	1	3	1	1	1	2	2	1	1
2. Ulcers	4											
3. Skin diseases	5											
CLASS IV. DEVELOPMENTAL DISEASES												
2,876	5	60	10	3	2	6	26	70	10	38	26	44
IV. ORDER 1. DEV. DISEASE OF CHILDREN.												
1,284	2	17	3	3	1	5	9	28	6	14	5	19
1,680	2	16	3	3	1	1	9	19	5	11	5	14
18		1				2		1			3	
2. { Premature birth	97							1	1	2	2	1
3. Cyanosis	2											
4. Spina bifida	1											
5. Other malformations	7							1				
6. Teething	55					2		5		1		
7. Injury at birth	14							1				
IV. ORDER 2. DEV. DISEASES OF WOMEN.												
263	1	7	3		1	1	1	9	1	4	1	2
1. Turn of life	6											
2. { Child-birth	245	1	6	3	1	1	1	9	1	4	1	2
2. { Abortion	10	1										
2. { Uterine hemorrhage	2											
IV. ORDER 3. DEV. DIS. OF OLD PEOPLE.												
1,014	2	30	4					15	24	3	15	19
1,014	2	30	4					15	24	3	15	19
IV. ORDER 4. DISEASES OF NUTRITION.												
315		6						1	9		5	3
315		6						1	9		5	3

TABLE 74.—CONTINUED.—*Causes of death, classified.*

Cause of death, 1891.	Counties—Alcona to Gladwin.																										
	State.	Alcona.	Alger.	Allegan.	Alpena.	Antrim.	Arenac.	Barnum.	Barry.	Bay.	Benzie.	Berrien.	Branch.	Calhoun.	Cass.	Charlevoix.	Cheboygan.	Chippewa.	Clare.	Chilton.	Crawford.	Delta.	Dickinson.	Eaton.	Emmet.	Genesee.	Gladwin.
CLASS V.—VIOLENT DEATHS.....	993	—	14	8	1	2	2	2	2	34	4	15	10	11	8	4	6	2	3	10	1	13	35	6	6	11	1
V. ORDER 1. ACCIDENT OR NEGLIGENCE.....	837	—	12	6	1	2	2	1	27	4	14	8	4	7	3	6	3	3	7	—	12	32	5	5	8	1	
1. Fractures and contusions.....	35	—	—	1	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	
2. Wounds.....	2	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
3. Burns and scalds.....	69	—	1	1	—	—	—	—	5	1	1	1	—	1	—	—	—	—	1	—	1	—	—	—	—	—	
4. Poison.....	31	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	
5. Drowning.....	146	—	1	4	1	1	1	—	7	—	1	1	—	2	—	5	1	—	—	1	2	1	1	1	1	—	
6. Suffocation.....	23	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	1	—	—	3	—	—	—	—	
7. Railroad accidents.....	86	—	1	—	—	—	—	—	3	1	4	2	1	—	—	—	—	—	1	—	4	1	1	2	2	—	
8. Other casualties.....	445	—	9	—	1	1	1	1	10	2	5	4	3	4	3	1	2	—	—	4	4	25	3	2	4	1	
V. ORDER 2. HOMICIDE.....	15	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
V. ORDER 3. SUICIDE.....	79	—	2	1	—	—	—	1	2	—	—	1	7	1	—	—	—	—	—	2	1	—	—	1	1	—	
V. ORDER 4. VIOLENT DEATHS NOT INCLUDED ABOVE.....	62	—	—	1	—	—	—	—	3	—	1	1	—	—	1	—	—	—	1	1	1	3	—	1	2	—	
UNCLASSIFIED.....	107	—	3	1	—	—	—	2	5	1	4	1	2	—	—	—	2	3	—	—	8	3	—	1	—	—	
1. Hemorrhage.....	14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	1	—	—	—	—	—	
2. Inflammation.....	45	—	2	1	—	—	—	—	1	1	2	—	2	—	—	—	1	3	—	—	—	2	—	—	1	—	
3. Other indefinite returns.....	45	—	1	—	—	—	—	2	4	—	2	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Causes not specified.....	1,768	4	28	22	14	4	10	8	63	3	22	13	20	7	9	9	18	11	14	1	23	24	14	19	18	—	

TABLE 74.—CONTINUED.—Causes of death, classified.

Causes of death, 1891.	Counties.—Gogebie to Mecosta.																
	Gogebie.	Gd. Traverse.	Gratiot.	Hillsdale.	Houghton.	Huron.	Ingham.	Ionia.	Isabella.	Jackson.	Kalamazoo.	Kalkaska.	Kent.	Keweenaw.	Lake.	Lapeer.	Leelanau.
All causes	232	164	201	281	490	217	407	235	149	161	403	446	561	239	75	19	223
Specified causes.....	111	151	184	280	436	188	394	216	134	147	388	419	49	1163	73	19	204
Causes not specified.....	121	13	17	11	54	29	13	19	15	14	15	27	7	76	2	19	11
CLASSES.																	
I.—Zymotic diseases.....	40	36	49	66	156	48	96	57	30	49	127	96	15	356	29	6	64
II.—Constitutional diseases.....	12	24	41	56	60	46	62	39	14	27	55	68	8	191	7	1	27
III.—Local diseases.....	26	69	67	124	128	48	150	79	51	33	150	189	12	417	18	8	70
IV.—Developmental diseases.....	12	18	18	24	56	35	80	30	22	24	47	48	13	182	15	2	30
V.—Violent deaths.....	20	3	7	10	32	11	26	10	17	14	9	18	1	60	4	2	12
Unclassified.....	1	1	2	4	4	4	4	1	1	1	3	3	7	7	1	1	1
ORDERS.																	
I.—1. Miasmatic diseases.....	39	36	49	66	153	48	96	57	29	49	127	92	15	351	29	6	64
2. Euthetic diseases.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3. Dietic diseases.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4. Parasitic diseases.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
II.—1. Diabetic diseases.....	3	11	9	23	14	23	26	10	8	4	24	27	4	57	1	9	28
2. Tubercular diseases.....	9	13	32	33	46	23	36	29	6	23	31	41	4	134	7	1	18

3. { Cancer.....	1	2	7	10	3	8	16	5	3	17	20	32	3	10	15	10	9	2	7								
3. { Tumor.....	2	1	1	5	6	5	2	1	1	2	1	10	1	1	2	1	1	1	2								
4. Noma (Canker).....												2	4		2			2									
5. Gangrene.....	1	3				1				1	2	1	1			1		1									
II. ORDER 2. TUBERCULAR.....	9	13	32	33	46	23	38	29	6	23	31	41	4	134	7	1	18	13	61	17	8	40	16	2	26	14	11
1. Scrofula.....					1									5												1	
2. Consumption of bowels.....			1					1						1					1							1	
3. Phthisis (consumption of lungs).....	9	12	31	32	41	23	34	28	6	23	31	39	4	125	3	1	18	13	60	17	3	40	15	2	26	14	10
4. Hydrocephalus.....					1			2				2		3													
5. Marasmus.....	1				1									3	1												
CLASS III.—LOCAL DISEASES.....	26	69	67	124	128	48	150	79	51	33	150	159	12	417	18	8	70	13	178	66	1	111	90	2	117	53	55
ORDER 1. NERVOUS SYSTEM.....	5	34	20	35	38	12	57	21	26	12	48	62	2	128	4		16	4	56	24		44	28		37	24	18
Cephalitis.....	1	1	3	1	17	3	6	2	2			3		18			1	1	3			7	4		11	3	3
Apoplexy.....	4	2	2	2	4	7	5		1	5	3			10			1		7			9	2		8	2	2
Paralysis.....	1	16	6	21		19	8	5	4	22	29		33				9	1	25	12		17	1		8	8	6
Insanity.....	2										1	3		2					1	1							
Chorea.....																											
6. Epilepsy.....	2			1	1	2	1				1	2		3					2	1		2				1	1
7. Tetanus.....						1						1							1								
8. Convulsions.....	2	5	1		12	1	8	1	6		5	5	1	22			2	2	6	1		2	12		13	7	1
9. { Brain diseases.....	4	2	4	1	1	7		4	1	4		4		11			2		7	4		3	6		2	2	3
9. { Dropsy of brain.....					3			1	1	1		1		2					1			1					
10. Spinal fever.....			8			1	2	2	1	1	1	2		3								1					1
11. Meningitis.....				1							1			9	3								2				
12. Meningitis, cerebro spinal.....				1	2		1							1					1								
13. Meningitis, spinal.....			1	2			4		1			6		6					1							1	2

[illegible]

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IV. ORDER 3. DEV. DIS. OF OLD PEOPLE..	1	5	3	18	6	8	28	14	4	11	21	17	3	61	1	1	20	2	45	10	19	8	7	2	5
1. Old age.....	1	5	3	15	6	8	28	14	4	11	21	17	3	61	1	1	20	2	45	10	19	8	7	2	5
IV. ORDER 4. DISEASES OF NUTRITION.....		2	2	4	13		5	2	13	4	7	16	2	9	3	1	2	1	2		1	3	3	2	2
1. Atrophy and debility.....		2	2	4	13		5	2	13	4	7	16	2	9	3	1	2	1	2		1	3	3	2	2
CLASS V.—VIOLENT DEATHS.....	20	3	7	10	32	11	26	10	17	14	9	18	1	60	4	2	12	6	8	5	1	10	15	5	8
V. ORDER 1. ACCIDENT OR NEGLIGENCE.....	19	3	5	8	30	10	18	7	15	10	5	16	1	48	4		10	6	6	5	1	8	14	5	8
1. Fractures and contusions.....								2				1		5					1		1			1	3
2. Wounds.....																									
3. Burns and scalds.....	1	2		1	2				1	2				3			1		1		2	1		1	2
4. Poison.....	2		1		2	1		2		2				2			1		1						
5. Drowning.....	1		1	3	1	6	3	4					3	8	1	2	4			1	4	3	4	2	1
6. Suffocation.....				1	3				1		1														
7. Railroad accidents.....	3		2			1	2	1		3			3	1		1	1	1	1			1			
8. Other casualties.....	12	3	3	3	23	4	9	3	6	4	3	6	1	39	3	5	2	3	3		1	4	2	61	4
V. ORDER 2. HOMICIDE.....																1				1					
V. ORDER 3. SUICIDE.....				1	1	1	5	2	1	2	4	2		8		1	2		1		2				
V. ORDER 4. VIOLENT DEATHS NOT INCLUDED ABOVE.....	1		2	1			3	1	1	2				4					1						
UNCLASSIFIED.....	1	1	2		4			1					3	7		1	1	1	1	2	1		8		
1. Hemorrhage.....													1						1						
2. Inflammation.....						2		1						7		1				2					
3. Other indefinite returns.....	1	1	2		2								2						1		1		8		
Causes not specified.....	121	13	17	11	54	29	13	19	15	14	15	27	7	76	2	19	11	22	16	1	6	28	70	1	10
																									22

III.—1. Diseases of nervous system	11	6	2	20	23	54	5	63	15	1	9	5	44	8	1	92	19	3	20	69	40	25	27	45	530	3			
2. Diseases of organs of circulation		6	1	14	16	20	6	33	7	1	2	9	1	3	10	2	43	13	1	13	28	33	7	20	46	218	8		
3. Diseases of respiratory organs	5	2	1	17	16	1	38	17	30	7	1	10	24	2	86	19	1	10	23	14	19	21	36	471	6				
4. Diseases of digestive organs	3	4	2	12	7	21	3	22	8	1	1	9	5	20	43	11	7	22	19	6	10	22	201	4					
5. Diseases of urinary organs	1	1	4	7	8	2	20	2	2	1	1	7	7	1	16	7	3	9	16	10	9	6	10	61					
6. Diseases of generative organs													1	1	1	1	1	1	1	1	1	1	10						
7. Diseases of organs of locomotion				1																1			4						
8. Diseases of integumentary system					2	2	1	1	1	1	1	1	2		3	1	1	1	3	1			13	1					
IV.—1. Developmental diseases of children	8	8	2	18	9	39	9	5	10	2	4	7	4	17	4	69	11	4	10	23	15	7	19	13	352	6			
2. Developmental diseases of women	3	5	1	6	1		5	3	5	2	2		3	2	6	3		5	7	3	4	1	2	65	1				
3. Developmental diseases of old people	4	1	2	21	10	8	10	33	16	1	2	2	1	16	1	41	12	6	31	18	15	20	34	163	2				
4. Diseases of nutrition	1		1	1	7		3	1			1				13	3	3	8	3	1	1	7	113						
V.—1. Accident or negligence	6		2	6	9	15	5	9	7	1	1	9	3	11	1	37	6	4	11	21	7	8	11	8	128	2			
2. Homicide			2														1		2	2			2						
3. Suicide	1		1	1	1	1	1	1					1		1	1		2	5	1	1	1	2	7					
4. Other violent deaths				1			5				1							1	1	1		2	2	17					
CLASS I.—ZYMOTIC	48	37	9	80	75	4	113	44	91	25	7	1	33	2	16	88	8	1	278	72	9	53	150	42	41	50	69	1307	20
I.—ORDER 1. Miasmatic	48	37	9	79	74	4	111	44	86	25	7	1	32	1	14	88	7	1	270	71	8	52	150	42	41	50	68	1252	20
1. { Small-pox																										1			
{ Chicken-pox																	1												
2. Measles	5		6	1	3	2			2			1	1	4		2	2	4	11	1		2	5	25					
3. Scarlet fever			1	1	9	1	1	2					1	9	2	3	8	8		5	2		158						
4. Diphtheria	10	11	22	8	42	10	23	2			2	1	13	1	89	10	4	4	29	1	4	1	9	302					
5. { Membranous croup	1						2				1	1	1		5				2			1							
{ Croup	3	1	2	4	1	2	1	2	1			1	1	2		9	2		7			1		110					

TABLE 74.—CONTINUED.—Causes of death, classified.

[illegible]

[illegible]

TABLE 7A.—CONTINUED.—*Causes of death, classified.*

Causes of death, 1891.	Counties—Menominee to Wexford.																												
	Menominee.	Midland.	Missaukee.	Monroe.	Montcalm.	Montmorency.	Muskegon.	Newaygo.	Oakland.	Ocean.	Ogemaw.	Ontonagon.	Oscoda.	Otsego.	Ottawa.	Preeque Isle.	Roscommon.	Saginaw.	Sauk.	Schoolcraft.	Shiawassee.	St. Clair.	St. Joseph.	Tuscola.	Van Buren.	Washtenaw.	Wayne.	Wexford.	
3. Phthisis (consumption of lungs).....	6	12	4	33	23	1	52	6	40	11	3	2	12	1	3	23	2	83	32	2	17	55	27	39	44	40	411	7	
4. Hydrocephalus.....																													
5. Marasmus.....							1																					82	
CLASS III.—LOCAL DISEASES.....	20	19	6	76	70	1	141	35	169	40	3	4	39	1	13	108	10	233	71	8	61	163	117	65	93	159	1508	22	
III. ORDER 1. NERVOUS SYSTEM.....	11	6	2	29	23		54	5	63	15		1	9		5	44	8	1	92	19	3	20	69	40	25	27	45	530	3
1. Cephalitis.....	1			4	4		4	3	2			1	2		1	19			6	4		4	7	1	5	1	7	79	
2. Apoplexy.....				1	2		2		13	3			2		1				2	2	1		5	5		4	8	46	
3. Paralysis.....	1			12	5		11		19	3			3		2	8	2	18	3		5	21	17	6	8	17	45	1	
4. Insanity.....	2						2		11				1					1	1		1	1	2		1	1	1	1	
5. Chorea.....									2									1											
6. Epilepsy.....	1			2	1				6						1	2			1									4	
7. Tetanus.....							1											1					1					2	
8. Convulsions.....	6		1	2			18	1	2	4			2		1	7	6	35	5		4	8	4	8	2	4	257		
9. { Brain diseases.....	1	1		2	3		5		6	4					1	1	1	11	3		1	14	4	2	6	4	25	1	
9. { Dropsy of brain.....																			1		2						1		
10. Spinal fever.....					5		1	1	1	1					1	1		1		1		1	2		2			3	
11. Meningitis.....	1						1		1									2				1						25	
12. Meningitis, cerebro-spinal.....				1	1		1																						
13. Meningitis, spinal.....		1	1	2			5		1						1			9			4		1	1				12	
14. Diseases of spine.....	1	1		3	1		3		1						2			4			1	6	8	1	3	3		15	

Table 75 enables comparisons to be made of the number of deaths registered from each cause and each class of causes for each year of State registration since its establishment. For the first two columns, 1867 and 1868, the deaths were enumerated for the periods between April 5, 1867, and April 5, 1868, and from April 5, 1868, to December 31, 1868, respectively. Since that time the registration has been for each calendar year.

The series of five-year averages enables the amount of registration for successive periods to be readily distinguished, and affords a convenient basis of comparison for individual years. In some cases, as in "infantile diseases" already alluded to,* changes in methods of compilation are responsible for apparent differences and not actual changes in the deaths as returned.

In using the table, it will be noted that the exigencies of typographical arrangement required its division into two sections. The first includes the years from 1867 to 1880 and begins on the following page. The second section, embracing the years 1881-91, begins on page 238. Taken together the mortality registered for any disease for each of the twenty-five years of registration can be found.

It is needless to say to experienced statisticians that much caution and judgment must be used in accepting the figures given for the individual years of such a series in comparison with others until the methods of compilation and the inclusion of the titles have been fully compared. Different compilers, and even the same compilers in different years, may produce very different results from returns practically identical. Illustration of this has been sufficiently given and it is to be regretted that a full comparison of the methods under which the results for the various years were obtained, cannot at present be stated.

* Page 190, preceding. Deaths of persons aged over 80 years from "unknown" cause were classed under "old age" in 1888, and this practice, peculiar to that year, accounts for the climax in developmental diseases noted rather than the modifications in calling unknown deaths of children which was common to all the years 1864-85.

TABLE 75.—Deaths in Michigan from classified causes, 1867-91: with averages for the five-year periods, 1871-75, 1876-80, 1881-85, 1886-90.

Causes of death, 1867-1891.	Years 1867-1890.															
	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	Average, 1871-75.	1876.	1877.	1878.	1879.	1880.	Average, 1876-80.
All causes.....	6,271	6,372	9,145	10,766	9,728	13,371	14,258	12,500	11,990	12,369	12,576	12,919	12,766	14,407	16,102	13,754
Specified causes.....	5,351	5,657	7,893	9,335	8,654	11,967	12,718	10,986	10,603	10,986	11,347	11,577	11,460	13,003	14,655	12,398
Causes not Specified.....	920	655	1,252	1,331	1,074	1,404	1,540	1,500	1,387	1,381	1,229	1,342	1,306	1,404	1,447	1,356
CLASSES.																
I.—Zymotic diseases.....	1,636	1,826	2,513	3,429	2,612	4,399	4,027	3,360	2,798	3,425	3,094	3,319	3,121	4,177	4,825	3,707
II.—Constitutional diseases.....	1,301	1,177	1,734	2,072	1,852	2,146	2,207	2,117	2,190	2,102	2,318	2,454	2,290	2,343	2,546	2,396
III.—Local diseases.....	1,554	1,449	2,384	2,699	2,619	3,762	4,565	3,697	3,565	3,642	3,647	3,506	3,481	3,918	4,492	3,809
IV.—Developmental diseases.....	477	876	814	840	1,002	1,068	1,162	1,256	1,353	1,167	1,458	1,527	1,825	1,802	1,861	1,695
V.—Violent deaths.....	383	359	408	495	539	541	685	656	646	613	717	654	691	697	875	733
Unclassified.....	.....	.....	.....	.....	.....	56	72	14	51	39	53	67	52	66	56	59
ORDERS.																
I.—1. Miasmatic diseases.....	1,612	1,788	2,483	3,375	2,598	4,341	3,978	3,204	2,746	3,373	3,056	3,255	3,083	4,125	4,777	3,665
2. Enthetic diseases.....	2	1	2	13	2	9	6	9	12	8	10	9	3	15	17	11
3. Dietic diseases.....	10	4	13	16	25	27	33	28	24	27	16	13	19	21	22	18
4. Parasitic diseases.....	12	33	15	25	17	22	10	19	16	17	12	12	16	16	9	13
II.—1. Diathetic diseases.....	305	247	414	534	475	583	671	643	631	601	681	688	559	571	601	622
2. Tubercular diseases.....	996	930	1,320	1,388	1,377	1,563	1,536	1,474	1,559	1,502	1,667	1,766	1,731	1,772	1,945	1,774
III.—1. Diseases of nervous system.....	522	630	975	1,091	1,016	1,675	2,241	1,948	1,246	1,505	1,445	1,470	1,380	1,364	1,602	1,442
2. Diseases of organs of circulation.....	307	176	274	311	289	369	407	413	384	372	396	451	418	541	556	478
3. Diseases of respiratory organs.....	471	306	621	631	706	961	1,052	1,202	1,112	1,013	987	786	838	1,108	1,282	1,000
4. Diseases of digestive organs.....	210	260	311	480	432	554	615	535	505	546	586	549	567	612	662	595

b. Diseases of urinary organs.....	49	39	87	110	124	129	138	126	139	129	146	165	185	190	243	186
6. Diseases of generative organs.....	4	4	18	23	15	28	20	8	17	17	14	13	18	24	33	20
7. Diseases of organs of locomotion.....	41	11	9	8	4	3	3	5	18	5	10	5	13	8	21	11
8. Diseases of integumentary system.....	26	23	45	46	33	49	59	60	68	54	63	67	82	71	93	75
IV.—1. Developmental diseases of children.....	80	498	273	374	466	419	459	606	777	545	804	895	933	835	867	861
2. Developmental diseases of women.....	91	92	130	153	164	244	275	222	293	292	171	178	184	216	218	192
3. Developmental diseases of old people.....	239	254	310	313	372	400	428	428	378	400	453	489	579	608	625	557
4. Diseases of nutrition.....	67	33	101	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	129	143	85
—1. Accident or negligence.....	352	328	247	445	244	323	405	409	362	349	459	352	415	376	463	418
2. Homicide.....	11	7	6	5	9	8	17	12	17	13	12	13	11	17	6	12
3. Suicide.....	20	23	23	34	40	35	39	53	52	44	54	67	63	59	66	62
4. Violent deaths.....	.....	1	192	11	246	175	224	182	215	208	222	222	202	245	340	246
CLASS I.—ZYMOTIC.....	1,636	1,296	2,513	3,429	2,612	4,396	4,027	3,260	2,798	3,425	3,094	3,320	3,121	4,177	4,825	3,707
I.—ORDER I. Miasmatic.....	1,612	1,256	2,483	3,375	2,598	4,341	3,978	3,204	2,746	3,373	3,056	3,285	3,088	4,125	4,777	3,665
1. { Small-pox.....	10	8	42	10	74	302	92	18	26	102	76	102	6	6	3	39
{ Chicken-pox.....	.....	.....	3	1	1	2	1	1	3	2	2	.....	1	2	2	1
2. Measles.....	20	82	147	56	67	186	251	51	134	138	118	62	16	167	126	98
3. Scarletina.....	103	46	252	852	696	565	589	440	423	541	389	404	429	418	371	404
4. Diphtheria.....	117	69	89	121	129	192	217	213	207	192	311	593	887	1,478	1,542	961
5. Quinney.....	.....	3	3	1	2	16	10	12	6	9	10	5	10	12	9	9
6. Croup.....	117	64	105	127	153	162	172	142	167	159	178	164	236	278	322	236
7. Whooping-cough.....	79	120	158	119	68	192	206	153	101	144	181	131	132	162	264	174
8. { Typhoid fever.....	369	351	735	704	373	620	677	610	483	543	432	450	329	402	525	428
{ Typhus fever.....	.....	.....	.....	.....	.....	43	22	19	19	21	21	32	5	14	11	17
{ Typho-malarial fever.....	.....	.....	.....	.....	.....	.....	7	.....	.....	1	.....	.....	18	7	9	7

I. ORDER 3. DIETIC.		10	4	13	16	25	27	33	28	24	27	16	18	19	21	22	18
1. Privation									2	1	1						
{ Purpura				1	2		1		3	1	1	1	2				1
{ Rachitis							1	1	1	2	1		1	2	1	3	1
{ Scurvy		1				2		1	1		1	1		3			1
3. Delirium tremens (alcoholism)		3		2	4	8	12	16	6	11	11	6	1	8	6	5	5
4. Intemperance		6	4	10	10	15	12	15	15	9	13	8	9	6	14	13	10
5. Opium eating																1	
I. ORDER 4. PARASITIC																	
1. Thrush		12	33	15	25	17	22	10	19	16	17	12	12	16	16	9	18
2. Worms		2	2	5	20	7	11	7	8	11	9	5	7	3		5	5
3. Disease of scalp		10	13	10	5	10	10	3	11	5	8	7	5	13	10	4	8
CLASS II.—CONSTITUTIONAL		1,301	1,177	1,734	2,072	1,852	2,146	3,207	2,117	3,190	2,102	2,348	2,454	2,260	2,343	2,546	2,396
II. ORDER 1. DIATHETIC		306	247	414	534	475	583	671	643	631	601	681	698	559	571	601	622
1. Gout					1				1				1			1	
{ Anæmia							157	188	175	169	138	160	159		1	2	63
{ Dropsy		208	142	247	366	325	218	247	239	215	247	227	225	253	265	275	249
{ Cancer		75	77	113	121	106	134	173	190	202	161	242	265	270	272	284	267
{ Tumor																	
4. Noma (canker)		17	23	47	41	85	59	49	31	35	42	38	30	25	23	25	28
5. Mortification		5	5	7	5	9	15	14	17	10	13	14	18	11	10	11	13
II. ORDER 2. TUBERCULAR		998	930	1,320	1,538	1,377	1,508	1,836	1,474	1,558	1,502	1,667	1,756	1,731	1,772	1,945	1,774
1. Scrofula		30	21	60	63	41	47	46	29	35	40	26	34	35	39	33	33
2. Consumption of bowels				8	9	12	15	15	28	19	18	22	23	16	16	29	21
3. Phthisis (consumption of lungs)		949	853	1,241	1,463	1,315	1,485	1,460	1,401	1,496	1,431	1,605	1,681	1,666	1,702	1,849	1,701

TABLE 75.—CONTINUED.—Deaths by classified causes, twenty-five years.

Causes of death, 1867-1891.	Years, 1867-1890.															Average, 1876-90.
	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	Average, 1871-75.	1876.	1877.	1878.	1879.	1880.	
4. Hydrocephalus	17	56	11	3	9	13	5	8	6	8	6	7	8	6	7	7
5. Marasmus						8	10	8	8	5	8	11	6	9	27	12
CLASS III.—LOCAL DISEASES.....	1,554	1,419	2,384	2,699	2,619	3,762	4,565	3,697	3,565	3,642	3,647	3,506	3,481	3,918	4,492	3,809
III. ORDER 1. NERVOUS SYSTEM	522	630	975	1,061	1,016	1,975	2,241	1,348	1,246	1,505	1,445	1,470	1,339	1,364	1,602	1,442
1. Cephalitis	80	223	226	233	216	330	384	293	232	275	276	292	229	222	301	264
2. Apoplexy	38	37	65	54	70	70	81	63	95	76	111	86	92	108	120	102
3. Paralysis	79	67	120	122	144	155	173	177	176	165	236	249	254	275	290	261
4. Insanity	9	18	19	14	16	13	19	17	14	16	28	21	17	8	9	17
5. Chorea	2	2		1		4	5	3	2	3	3	3	1	2	1	2
6. Epilepsy	107	9	12	18	25	28	33	31	31	30	30	35	31	42	41	36
7. Tetanus		1	10	5	3	3	6	6		4	3	7	7	6	2	5
8. Convulsions	37	91	256	281	237	318	309	261	259	277	275	268	288	275	347	297
9. { Brain disease.....	170	141	267	363	305	214	207	173	141	208	218	203	252	292	295	252
{ Dropsy of brain.....						70	76	51	54	50	63	53	47	37	34	47
10. Spinal fever						112	428	86	74	141	73	73	63	47	71	65
11. Spotted fever	7					109	66	6	4	37	1	4		1	1	1
12. Meningitis						13	7	5	14	8	5	11	10	12	22	12
13. Meningitis, cerebro-spinal						75	145	32	36	58	14	9	8	10	5	9
14. Meningitis, spinal						51	166	51	38	61	30	30	28	31	58	37
15. Neuralgia		6				8	14	3	6	6	4	6				2
16. Spine disease		28				99	170	114	69	90	73	81				31

DEATHS BY CLASSIFIED CAUSES, TWENTY-FIVE YEARS.

17. Spine, inflammation of	207	176	274	311	289	369	407	413	384	372	386	451	418	541	556	478
18. Frightened	13	23	43	49	56	69	71	68	63	54	56	78	85	71	69	69
19. Disease of nerves						1	9	8	3	2	3	2	2	2	2	2
III. ORDER 2. ORGANS OF CIRCULATION	207	163	252	268	240	311	329	342	313	307	340	395	367	454	433	409
1. Pericarditis																
2. Aneurism																
3. { Heart disease																
{ Heart failure																
4. Emboli						1										
III. ORDER 3. RESPIRATORY ORGANS	471	306	621	631	706	961	1,051	1,202	1,142	1,018	987	786	838	1,108	1,232	1,000
1. Epistaxis				1		2	1		2	1	3		4	5	1	3
2. Laryngitis			3				2	1	8	2	4	4	10	3	3	5
3. Bronchitis	12	7	11	20	19	25	25	34	43	29	43	42	45	51	50	46
4. Pleurisy	11	10	14	27	26	32	36	22	32	30	26	24	20	26	35	26
5. Pneumonia	316	258	455	405	432	700	787	914	833	743	675	538	524	780	919	687
6. Asthma	9	9	24	22	17	25	21	20	20	21	23	25	31	39	39	31
7. Lung disease	123	22	114	156	162	177	179	311	195	185	201	149	193	188	227	192
8. Catarrh									9	2	12	4	11	16	8	10
III. ORDER 4. DIGESTIVE ORGANS	240	260	311	480	432	554	645	535	565	546	586	549	597	612	692	595
1. Gastritis	8	4	15	26	25	31	41	24	46	31	70	34	50	70	53	55
2. Enteritis	96	82	119	187	184	285	286	208	231	227	242	231	220	237	298	240
3. Peritonitis	9	19	5	5	7	14	11	11	16	12	11	8	11	16	10	11
4. Ascites				7	3	4	6	9	9	6	5	4	4	2	5	4
5. Ulceration of intestines			3	8	5	2	3	6	8	7	4	3	2	1	12	4
6. Hernia	10	10	18	16	12	16	22	13	27	18	16	19	17	26	13	18
7. Obstruction of bowels			1	8	5	3	6	1		3	2	3	1	1	4	2

VITAL STATISTICS OF MICHIGAN, 1891.

TABLE 75.—CONTINUED.—Deaths by classified causes, twenty-five years.

		Years, 1867-1890.															Average, 1876-90.
Causes of death, 1867-1890.		1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	Average, 1871-75.	1876.	1877.	1878.	1879.	1880.	Average, 1876-90.
8.	Intrauterine			2	1	2	1	2		4	2	2	2	1	1	2	2
9.	Stricture of intestines							1	2		1		1	4	2	7	3
10.	Fistula		3				1					1		1	1	1	1
11.	Stomach disease	51	32	77	105	77	62	74	69	78	72	74	77	74	83	108	83
12.	Pancreas disease								1						1		
13.	Hepatitis	4	5	5	7	10	11	10	11	7	10	7	6	10	8	11	9
14.	{ Biliary calculus															1	
	{ Jaundice	4	13	11	22	19	25	17	16	15	18	24	22	22	18	21	21
15.	Liver disease	57	47	55	83	83	100	101	95	91	94	91	98	111	99	92	98
16.	Spleen disease	1	2		5		6	8	2	2	4	1	2	4	5	9	4
17.	Bowel diseases, etc.		33				34	57	40	41	34	36	39	35	41	45	39
18.	Mouth disease						9				2						
19.	Throat disease		10						27		5						
43	III.—ORDER 5. URINARY ORGANS.		39	57	110	124	129	138	126	130	129	146	165	185	190	243	186
	1. Nephritis		2	3	10	13	15	15	16	12	14	10	10	13	13	15	13
	2. Ischuria				1												
	3. Bright's disease of kidneys		3		2	10	11	15	15	11	12	20	35	33	36	80	41
17	4. Diabetes		12	25	29	33	34	32	27	36	33	19	39	33	42	44	35
11	5. Calculus		5	24	25	24	24	26	20	21	23	34	17	23	23	23	24
	6. Cystitis		2	6	7	4	6	9	10	17	9	9	13	11	6	16	11
15	7. Kidney diseases		15	29	36	40	39	41	38	38	38	54	51	73	65	65	63

III.—ORDER 6. GENERATIVE ORGANS.....																			
1. { Ovarian disease.....	4	4	18	22	15	23	20	8	17	17	14	13	18	24	33				
	1	1	7	7	4	.....	.....	.....	.....	1	.....	.....	2	1	2				
2. Disease of uterus.....	.....	.....	.....	.....	.....	5	8	1	6	2	3	5	6	11	14				
	3	3	11	15	11	18	17	6	11	13	11	8	9	12	17				
3. Breast disease.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4. Hydrocele.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	.....	.....		
III.—ORDER 7. ORGANS OF LOCOMOTION.....																			
1. Arthritis.....	41	11	3	8	4	2	3	5	13	5	10	5	13	8	21				
2. Joint diseases.....	.....	.....	1	1	.....	.....	.....	1	2	1	.....	.....	1	1	1				
.....	41	11	2	7	4	2	3	4	11	5	10	5	12	7	20				
III.—ORDER 8. INTERMENTARY SYSTEM.....																			
1. Phlegmon.....	26	23	45	46	33	49	59	60	68	54	63	67	82	71	93				
.....	17	.....	61	25	13	30	22	28	23	23	26	31	33	26	38				
2. Ulcer.....	9	22	12	6	2	1	5	3	6	3	4	2	8	6	13				
3. Skin diseases.....	.....	1	17	15	18	18	32	29	39	27	33	34	41	39	42				
CLASS IV. DEVELOPMENTAL DISEASES																			
.....	477	876	814	840	1,002	1,068	1,162	1,256	1,353	1,167	1,458	1,527	1,825	1,802	1,861				
IV. ORDER 1. DEV. DISEASES OF CHILDREN.....																			
1. Still-born.....	80	498	273	374	466	419	459	606	777	545	504	865	938	835	867				
2. { Infantile.....	27	46	129	226	268	204	274	464	629	368	646	724	795	749	738				
..... { Premature birth.....	31	376	51	56	112	79	56	27	44	64	86	24	31	20	27				
.....	.....	.....	.....	.....	.....	18	16	21	28	17	34	41	34	19	43				
3. Cyanosis.....	1	.....	2	2	1	.....	.....	.....	.....	.....	2	5	1	2	6				
4. Spina bifida.....	.....	.....	2	2	.....	1	1	2	1	1	.....	.....	1	.....	.....		
5. Other malformations.....	.....	.....	4	6	3	13	6	3	4	6	9	5	11	3	3				
6. Teething.....	21	76	85	82	82	103	106	89	71	90	77	66	60	40	49				
7. Injury at birth.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	2	1				
IV. ORDER 2. DEV. DISEASES OF WOMEN.....																			
.....	91	92	130	153	161	244	275	222	203	252	171	173	184	216	218				
1. { Dysmenorrhea.....	.....	.....	2	3	.....	2	1	.....	1	1	.....	.....	3	.....	.....		
..... { Turn of life.....	7	2	.....	.....	4	.....	4	4	8	8	4	3	5	3	8				

TABLE 75.—CONTINUED—Deaths by classified causes, twenty-five years.

Years, 1867-1890.

Causes of death, 1867-1890.																
1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	Average, 1871-75.	1876.	1877.	1878.	1879.	1880.	Average, 1876-80.	
84	85	128	150	160	227	260	205	184	207	154	160	167	199	201	176	
3	3	.....	.....	.....	10	9	7	10	7	7	6	7	12	6	8
2	2	.....	.....	.....	5	1	6	5	3	6	4	2	2	3	3
{ Uterine hemorrhage.....																
239	254	310	313	372	400	428	428	373	400	483	489	579	608	625	557	
239	254	310	313	372	400	428	428	373	400	483	489	579	608	625	557	
67	32	101	.....	.....	.....	.....	.....	.....	.....	.....	.....	129	143	151	85
67	32	101	.....	.....	.....	.....	.....	.....	.....	.....	.....	129	143	151	85
352	328	408	485	539	541	635	656	646	613	747	654	691	697	875	733	
207	170	247	445	244	323	405	409	392	349	459	352	415	376	463	413	
10	1	26	30	28	43	66	62	51	51	49	64	62	58	57	58	
16	16	16	22	15	30	12	20	15	18	28	10	18	12	17	17	
56	41	68	62	67	54	89	71	70	70	66	60	67	64	64	64	
16	17	16	20	20	35	27	22	25	26	25	33	37	21	37	31	
63	80	96	107	87	90	108	116	108	102	177	103	117	122	179	140	
.....	3	25	12	9	11	21	19	19	16	29	14	25	22	21	22	
.....	
.....	192	18	15	82	99	74	66	85	68	89	77	88	81	
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DEATHS BY CLASSIFIED CAUSES, TWENTY-FIVE YEARS. 237

V. ORDER 3. SUICIDE.....	20	23	23	34	40	35	39	53	52	44	54	67	63	59	66	62
1. Wounds.....				3	6			8	2	2	.....	10	10	5	11	7
2. Poison.....				2	8		4	8	6	5	19	16	11	9	6	12
3. Drowning.....							2	4	4	2	6	5	3	2	4	4
4. Hanging.....					6		11	9	6	6	7	5	11	12	11	9
5. Otherwise and not specified.....				29	20	35	22	29	34	28	22	38	28	31	34	30
V. ORDER 4. VIOLENT DEATHS NOT INCLUDED ABOVE.....			192	11	246	175	224	182	215	208	222	222	202	245	340	246
Unclassified.....						56	72	14	51	39	53	67	52	66	56	59
Causes "unknown".....	920	632	1,282	1,231	1,074	1,404	1,540	1,500	1,387	1,381	1,259	1,392	1,306	1,404	1,447	1,356

VITAL STATISTICS OF MICHIGAN, 1891.

TABLE 75.—CONTINUED.—Deaths by classified causes, twenty-five years.

Causes of death, 1861-1891.	Years, 1861-1891.										
	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	Average, 1861-90.
All causes	19,228	16,425	16,906	16,056	16,646	17,454	18,187	21,764	20,315	21,647	20,279
Specified causes	17,604	14,970	15,520	16,599	15,895	16,155	17,144	20,537	19,081	20,134	19,025
Causes not specified	1,624	1,455	1,386	1,056	951	1,299	1,043	1,227	1,234	1,513	1,254
CLASSES.											
I.—Zymotic diseases	6,793	4,718	4,367	4,676	3,623	4,841	4,639	4,873	4,772	5,627	4,981
II.—Constitutional diseases	2,734	2,612	2,817	3,065	2,979	2,827	2,963	3,065	3,123	3,407	3,390
III.—Local diseases	5,011	4,691	4,923	5,356	5,244	5,045	5,370	6,034	6,459	6,759	7,016
IV.—Developmental diseases	2,033	2,067	2,496	2,580	2,965	2,467	2,979	3,125	3,549	3,137	3,348
V.—Violent deaths	966	778	940	968	907	898	923	1,044	1,068	1,069	1,037
Unclassified	67	104	74	63	57	77	70	67	80	115	8
ORDERS.											
I.—1. Miasmatic diseases	6,753	4,679	4,352	4,630	3,581	4,799	4,590	4,810	4,950	5,582	4,915
2. Enthetic diseases	7	7	12	19	19	18	10	7	5	15	9
3. Dietic diseases	15	20	28	14	18	19	27	17	21	22	22
4. Parætic diseases	18	12	7	13	5	11	12	9	13	8	10
II.—1. Diathetic diseases	614	650	723	747	773	707	773	840	981	997	895
2. Tubercular diseases	2,080	1,962	2,081	2,318	2,106	2,120	2,190	2,245	2,314	2,410	2,326
III.—1. Diseases of nervous system	1,986	1,750	1,712	1,980	1,907	1,859	2,067	2,119	2,345	2,062	2,163
2. Diseases of organs of circulation	623	642	778	801	815	782	810	975	1,062	1,147	1,062
3. Diseases of respiratory organs	1,390	1,307	1,205	1,211	1,185	1,214	1,263	1,488	1,576	1,756	1,592
4. Diseases of digestive organs	803	715	747	835	757	771	781	863	925	1,116	945

DEATHS BY CLASSIFIED CAUSES, TWENTY-FIVE YEARS. 237

1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	Total
CLASS 2. SUICIDE																					
1. Wounds	8	23	34	40	35	39	53	52	44	54	67	63	59	66	62						
2. Poison	2	14	2	8	4	8	8	6	5	19	16	11	9	6	12						
3. Drowning	2	14	2	8	4	8	4	4	2	6	5	3	2	4	4						
4. Hanging	6	11	11	6	11	9	9	6	6	7	5	11	12	11	9						
5. Otherwise and not specified	29	29	29	20	35	22	29	34	28	22	38	28	31	34	30						
V. ORDER 4. VIOLENT DEATHS NOT INCLUDED ABOVE																					
Unclassified	11	192	11	216	175	224	182	215	208	222	222	202	245	340	246						
Causes "unknown"	920	632	1,281	1,074	1,404	1,540	1,500	1,387	1,381	1,229	1,392	1,306	1,404	1,447	1,356						

VITAL STATISTICS OF MICHIGAN, 1891.

TABLE 75.—CONTINUED.—Deaths by classified causes, twenty-five years.

Cause of death, 1881-1891.	Years, 1881-1891.											
	1881.	1882.	1883.	1884.	1885.	Average, 1881-85.	1886.	1887.	1888.	1889.	Average, 1886-90.	1891.
All causes	19,288	16,425	16,906	18,056	16,646	17,454	18,187	19,482	21,764	20,815	20,279	22,079
Specified causes	17,604	14,970	15,520	16,988	16,685	16,155	17,144	18,228	20,537	19,081	19,025	20,811
Causes not specified	1,684	1,455	1,386	1,068	961	1,299	1,043	1,254	1,227	1,234	1,254	1,768
CLASSES.												
I.—Zymotic diseases	6,793	4,718	4,387	4,676	3,628	4,841	4,639	4,873	4,994	4,772	4,981	5,929
II.—Constitutional diseases	2,734	2,612	2,817	3,066	2,879	2,827	2,963	3,085	3,527	3,123	3,407	3,380
III.—Local diseases	5,611	4,691	4,923	5,356	5,244	5,045	5,570	6,034	6,936	6,459	6,356	7,016
IV.—Developmental diseases	2,038	2,067	2,469	2,840	2,905	2,467	2,979	3,125	3,960	3,549	3,137	2,876
V.—Violent deaths	908	778	940	898	907	898	923	1,044	1,033	1,066	1,037	998
Unclassified	67	104	74	83	57	77	70	67	77	80	8	107
ORDERS.												
I.—1. Miasmatic diseases	6,753	4,679	4,352	4,830	3,581	4,799	4,590	4,810	4,950	4,733	4,937	5,855
2. Enthetic diseases	7	7	12	19	19	13	10	7	15	5	10	9
3. Dietic diseases	15	20	26	14	18	19	27	17	21	21	22	51
4. Parasitic diseases	18	12	7	13	5	11	12	9	8	13	10	14
II.—1. Diathetic diseases	614	650	723	747	773	707	773	840	981	879	895	1,155
2. Tubercular diseases	2,640	1,962	2,044	2,316	2,106	2,120	2,190	2,245	2,543	2,344	2,526	2,285
III.—1. Diseases of nervous system	1,860	1,750	1,712	1,900	1,907	1,859	2,067	2,119	2,315	2,163	2,163	2,381
2. Diseases of organs of circulation	623	642	775	801	815	782	810	975	1,062	1,147	1,196	1,361
3. Diseases of respiratory organs	1,590	1,397	1,305	1,211	1,185	1,214	1,293	1,488	1,883	1,576	1,592	1,865
4. Diseases of digestive organs	803	715	747	848	787	771	781	894	1,001	926	945	1,037

DEATHS BY CLASSIFIED CAUSES, TWENTY-FIVE YEARS.

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	15	20	26	14	16	19	27	17	21	21	22	22	51
I. ORDER 3. DIARRHOEA.....													20
1. Privation.....													
2. { Purpura.....													
{ Rachitis.....	2	3	1	1	2	2	2	1	1	3		2	2
{ Scoury.....													2
3. Delirium tremens (alcoholism).....	5	4	9	3	4	5	3	7	6	8	7	6	
4. Intemperance*.....	6	13	16	9	12	12	20	8	13	10	14	18	27
5. Opium eating.....				1			2	1	1		1	1	
I. ORDER 4. PARASITIC.....	18	12	7	12	5	11	12	9	8	13	8	10	14
1. Thrush.....	13	6	3	6	2	6	5	3	3	5	5	4	8
2. Worms.....	5	6	4	7	3	5	7	6	5	8	3	6	5
3. Disease of scalp.....													1
CLASS II.—CONSTITUTIONAL.....	2,734	2,612	2,817	3,065	2,879	2,829	2,933	3,055	3,527	3,123	3,407	3,321	3,300
II. ORDER 1. DIATHETIC.....	644	650	728	747	773	707	773	840	964	879	997	895	1,155
1. Gout.....				1	2	1				1	1		2
2. { Anemia.....		2	3	8	3	3	3	8	3	2	7	5	8
{ Dropsy.....	283	317	298	324	330	310	333	338	462	337	421	378	397
3. { Cancer.....	310	301	383	361	408	352	391	453	490	492	533	470	534
{ Tumor.....													157
4. Noma (Canker).....	44	29	21	37	15	29	25	28	21	25	18	24	28
5. Mortification.....	6	1	20	16	20	13	21	13	13	22	17	18	29
II. ORDER 2. TUBERCULAR.....	2,090	1,962	2,094	2,348	2,106	2,130	2,190	2,245	2,543	2,244	2,410	2,326	2,335
1. Scrofula.....	32	30	27	42	25	31	25	28	23	27	38	28	17
2. Consumption of bowels.....	36	26	33	34	19	29	21	24	31	21	32	26	23
3. Phthisis (consumption of lungs).....	1,975	1,841	2,016	2,220	1,985	2,009	2,051	2,167	2,451	2,173	2,246	2,224	2,065

* Includes delirium tremens in 1891.

VITAL STATISTICS OF MICHIGAN, 1891.

TABLE 75.—CONTINUED.—Deaths by classified causes, twenty-five years.

Years 1881-1891.												
Causes of death, 1881-1891.												
1881.	1882.	1883.	1884.	1885.	Average, 1881-'85.	1886.	1887.	1888.	1889.	1890.	Average, 1886-'90.	1891.
9	18	10	8	7	9	6	5	8	7	20	9	9
28	52	9	44	60	41	57	21	30	16	74	40	90
5,011	4,691	4,923	5,356	5,244	5,045	5,570	6,084	6,966	6,459	6,759	6,856	7,016
1,968	1,750	1,712	1,900	1,907	1,859	2,067	2,119	2,345	2,193	2,082	2,163	2,394
963	276	298	310	296	308	332	319	405	341	318	843	315
110	87	85	130	116	106	153	135	144	147	148	146	213
270	371	351	410	425	365	503	489	572	558	572	589	596
16	11	23	13	27	19	27	34	25	26	30	29	39
5	2	6	4	6	5	2	2	2	3	3	2	3
63	43	45	43	50	50	49	54	65	40	54	52	42
12	15	4	3	3	7	3	7	7	8	10	7	13
387	356	344	436	452	385	431	474	516	453	249	445	547
370	334	296	356	390	335	361	382	375	407	394	380	302
54	35	38	41	27	39	34	57	39	36	31	37	13
126	97	104	107	74	104	77	79	74	74	53	71	45
9	2	3	1	3	4	3	2	1	1	1	1	1
21	16	20	16	31	21	28	20	42	22	45	31	60
41	24	17	13	6	20	7	5	13	3	5	7	12
123	64	83	191	60	89	70	77	63	63	74	69	84
1			1				1	1	1	4	1	107

DEATHS BY CLASSIFIED CAUSES, TWENTY-FIVE YEARS.

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	4	3	2	1	1	2	2	2	2	2	2	2	2
17. Spine, inflammation of.....													38
18. Frightened.....	1												
19. Disease of nerves.....													
III. ORDER 2. ORGANS OF CIRCULATION.....	633	642	775	804	815	782	810	975	1,082	1,147	1,198	1,042	1,851
1. Pericarditis.....	102	68	82	70	70	78	67	109	96	65	72	82	70
2. Aneurism.....	3	15	13	13	16	12	16	21	27	15	12	18	4
2. { Heart disease.....	516	559	680	721	729	641	727	845	969	1,067	1,114	9	902
2. { Heart failure.....													375
4. Emboli.....	2												
ORDER 3. RESPIRATORY ORGANS.....	1,360	1,307	1,305	1,311	1,185	1,214	1,263	1,488	1,595	1,576	1,765	1,591	1,665
1. Epistaxis.....	1	1	2	1	1				1	1	1	1	
2. Laryngitis.....	3	10	3	3	3	4	5	4	5	3	3	4	8
3. Bronchitis.....	70	103	89	98	114	95	99	125	211	122	193	150	143
4. Pleurisy.....	25	19	21	19	13	22	21	29	43	25	27	30	24
5. Pneumonia.....	935	831	831	840	803	846	835	966	1,301	1,130	1,183	1,087	1,243
6. Asthma.....	36	43	51	61	63	52	66	59	65	59	74	65	77
7. Lung disease.....	132	190	199	178	168	183	242	235	239	203	271	237	183
8. Catarrh.....	8	5	9	11	16	10	16	20	25	30	5	19	17
III. ORDER 4. DIGESTIVE ORGANS.....	808	715	747	835	757	771	781	886	1,004	926	1,113	944	1,027
1. Gastritis.....	63	58	69	59	62	63	60	60	78	50	53	59	52
2. Enteritis.....	342	276	291	251	234	317	329	240	390	332	315	345	355
3. Peritonitis.....	19	21	16	27	23	21	32	35	46	50	36	52	116
4. Ascites.....	3	5	2	3	1	3	5	7	4			3	6
5. Ulceration of intestines.....	5	7	6	7	5	6	6	9	11	10	9	9	2
6. Hernia.....	23	26	30	23	25	25	32	26	37	44	36	35	36
7. Obstruction of bowels.....	7		4	2		3	1	4	5			2	21

DEATHS BY CLASSIFIED CAUSES, TWENTY-FIVE YEARS.

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III. ORDER 6. GENERATIVE ORGANS.....										21	17	18	32	23	22	24	27	26	22	3	20	22
1. { Ovarian disease.....										1	1						1					1
1. { Ovarian tumor**.....										11	5	5	12	12	9	2	6	8	10	2	6	
2. Disease of uterus.....										9	11	13	20	11	13	23	20	16	12	1	15	18
3. Breast disease.....																						2
4. Hydrocele.....																						1
III. ORDER 7. ORGANS OF LOCOMOTION.....										9	8	11	16	14	12	7	9	10	10	19	11	14
1. Arthritis.....												1	3	5	2		2		1	5	2	
2. Joint diseases.....										9	8	10	13	9	10	7	7	10	9	14	9	14
III. ORDER 8. INTEGUMENTARY SYSTEM.....										88	75	89	117	130	100	137	130	139	131	161	140	57
1. Phlegmon.....										28	21	38	43	47	85	57	46	49	45	53	50	48
2. Ulcers.....										9	8	6	7	7	7	10	14	8	11	6	10	4
3. Skin diseases†.....										51	46	45	67	76	57	70	70	82	75	102	80	5
CLASS IV. DEVELOPMENTAL DISEASES										2,033	2,067	2,369	2,880	2,963	2,467	2,979	2,125	3,960	3,549	2,137	2,848	2,878
IV. ORDER 1. DEV. DISEASES OF CHILDREN										862	991	1,099	1,528	1,676	1,231	1,635	1,710	2,180	1,978	1,661	1,833	1,334
1. Still-born.....										691	792	884	919	1,008	859	909	897	1,353	1,302	1,307	1,155	1,080
2. { Infantile.....										30	43	103	490	543	242	591	653	643	621	127	528	18
2. { Premature birth.....										41	55	47	53	56	50	38	52	60	53	63	55	97
3. Cyanosis.....										1	4			2	1	2		2	2	4	2	2
4. Spina bifida.....										1	1	1	1	2	1	4	1	3	1	2	2	1
5. Other malformations.....										10	12	8	7	7	9	8	11	11	12		8	7
6. Teething.....										84	83	55	57	49	66	75	81	80	83	67	79	55
7. Injury at birth.....										4	1	1	1	4	2	4	10	5	5	1	5	14
IV. ORDER 2. DEV. DISEASES OF WOMEN.....										218	230	246	242	241	233	241	250	259	263	193	242	263
1. { Dysmenorrhea.....																1						
1. { Turn of life.....										9	6	5	6	6	6	10	9	7	8	2	7	6

TABLE 75. CONTINUED.—Deaths by classified causes, twenty-five years.

Causes of death, 1867-1891.	Years, 1867-1891.											
	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	Average, 1867-75.	1876.	1877.
8. Intussusception.....	1											
9. Stricture of intestines.....	9	13	9	6	7	9	8	6	13	8		
10. Fistula.....				1	3	3				2		
11. Stomach disease.....	114	103	117	112	104	110	108	179	158	194	123	
12. Pancreas disease.....		1										
13. Hepatitis.....	11	6	11	9	6	9	8	14	6	9		
14. { Biliary calculus.....												
{ Jaundice.....	43	28	23	28	44	33	22	23	26	27	29	40
15. Liver disease.....	92	111	108	118	100	105	92	111	138	119	105	118
16. Spleen disease.....	5	5	1	4	1	3	8	1	4	6	1	4
17. Bowel diseases, etc.....	71	60	62	72	44	62	66	74	63	79	90	74
18. Mouth disease.....			5	7	9	4	6	3	7	6		31
19. Throat disease.....												
III. ORDER 5. URINARY ORGANS.....												
1. Nephritis.....	271	277	306	381	413	386	431	438	455	464	435	443
2. Ischuria.....	23	7	9	12	17	14	20	21	31	13	8	21
3. Bright's disease of kidneys.....	1										1	
4. Diabetes.....	90	138	137	179	198	153	214	205	310	239	319	257
5. Calculus.....	49	53	58	49	65	55	68	61	71	74	63	78
6. Cystitis.....	14	6	16	16	31	15	13	17	14	7	10	12
7. Kidney diseases.....	11	7	17	13	15	13	23	24	5	20	12	17
	83	67	79	83	97	89	94	110	134	123	116	125

V. ORDER 3. SUICIDE.....												
1. Wounds.....	57	63	91	104	91	81	83	105	101	94	108	98
2. Poison.....	7	8	10	15	10	10	11	16	12	12	8	12
3. Drowning.....	13	17	12	9	11	12	9	14	8	6	11	10
4. Hanging.....	3	3	3	2	4	8	4	9	4	4	5	5
5. Otherwise and not specified.....	8	8	17	13	14	12	8	10	14	9	17	12
	27	26	49	65	52	44	50	56	63	63	67	60
												57
V. ORDER 4. VIOLENT DEATHS NOT INCLUDED ABOVE.....												
Unclassified.....	225	268	306	306	297	300	350	335	364	416	333	379
Causes "unknown".....	67	104	74	88	57	77	70	67	77	80	115	82
	1,624	1,455	1,386	1,068	951	1,299	1,043	1,254	1,237	1,234	1,513	1,254
												1,763

* By re-count of returns of 1890. See note under disease of brain, Table 78. † Deaths returned from "disease of spine" were classed under "brain disease" in the years preceding 1891. ‡ By re-count of returns of 1890. See note under pneumonia, Table 78. § Includes intussusception and stricture in 1891. || 13 ovarian tumors are included in "tumors" for 1891. ¶ The numbers given for the years prior to 1891 are far too high, as may be seen on comparing them with the numbers given in the alphabetical lists for those years. Erysipelas is classed elsewhere. ** No figures are given under this specific title for 1891. The returns are not sufficiently definite to distinguish the legal characters of the homicides reported with any precision.

To learn whether certain causes of death are actually increasing or diminishing in the State, comparison of the deaths as returned must be made with the population, upon which the returns are based. As is customary in mortality reports, the population of the State has been estimated for inter-census years* during which it cannot be certainly known, and the mean estimated populations of five-year periods, corresponding to the averages in the preceding table, have been used in obtaining the *rates per 100,000 population* given in Table 76.

TABLE 76—Deaths in Michigan from classified causes during the year 1891, compared with averages for the five-year periods 1871-75, 1876-80, 1881-85, 1886-90; also death-rates per 100,000 estimated population.

Causes of death.	Year 1891.	Average, 5 years, 1886-90.	Average, 5 years, 1881-85.	Average, 5 years, 1876-80.	Average, 5 years, 1871-75.	Rates per 100,000 population.				
						1891.	1886-90.	1881-85.	1876-80.	1871-75.
All causes.....	22,079	20,279	17,454	13,754	12,869	1031.9	1012.5	983.8	889.5	937.1
Specified causes.....	20,811	19,025	16,155	12,398	10,986	949.3	949.9	910.6	801.8	832.4
Causes not specified.....	1,768	1,254	1,299	1,356	1,883	82.6	62.6	73.2	87.7	104.7
CLASSES.										
I.—Zymotic diseases.....	5,929	4,981	4,841	3,707	3,425	277.1	248.5	272.9	239.7	259.4
II.—Constitutional diseases.....	3,890	3,221	2,827	2,396	2,102	158.4	160.5	159.4	154.9	159.2
III.—Local diseases.....	7,016	6,356	5,045	3,809	3,642	327.9	317.3	284.4	245.3	276.0
IV.—Developmental diseases.....	2,876	3,348	2,467	1,695	1,167	134.4	167.0	139.0	109.6	88.4
V.—Violent deaths.....	998	1,037	998	733	613	46.4	51.5	50.6	47.4	46.4
Unclassified.....	107	82	77	59	39	3.0	4.1	4.4	2.8	3.0
ORDERS.										
I.—1. Miasmatic diseases.....	5,535	4,980	4,700	3,665	3,373	273.6	246.6	270.5	237.0	253.5
2. Euthetic diseases.....	9	10	13	11	8	.4	.5	.7	.7	.6
3. Dietic diseases.....	51	22	19	18	27	2.4	1.1	1.1	1.2	2.0
4. Parasitic diseases.....	14	10	11	13	17	.7	.5	.6	.5	1.3
II.—1. Diabetic diseases.....	1,155	806	707	622	601	59.9	41.7	39.9	40.2	45.5
2. Tubercular diseases.....	2,235	2,326	2,130	1,774	1,502	164.5	116.1	119.5	111.7	113.5
III.—1. Diseases of nervous system.....	2,334	2,163	1,850	1,442	1,305	199.1	107.9	104.8	98.2	114.0
2. Diseases of organs of circulation.....	1,351	1,042	732	478	352	63.1	52.0	41.3	30.9	25.3
3. Diseases of respiratory organs.....	1,605	1,582	1,254	1,300	1,013	79.2	79.5	68.4	64.7	76.7
4. Diseases of digestive organs.....	1,027	943	771	505	546	45.0	47.2	43.5	38.4	41.4
5. Diseases of urinary organs.....	516	413	338	186	129	24.1	22.1	15.9	12.1	9.8
6. Diseases of generative organs.....	22	20	22	20	17	1.0	1.1	1.5	1.3	1.3
7. Diseases of organs of locomotion.....	14	11	12	11	5	.7	.5	.7	.7	.4
8. Diseases of integumentary system.....	57	136	95	75	34	2.7	6.9	5.5	4.9	4.1

* See EXHIBIT E, p. N.

DEATH-RATES BY CLASSIFIED CAUSES, FIVE-YEAR PERIODS. 249

TABLE 76.—CONTINUED.—Deaths and death-rates, five-year periods.

Causes of death.	Year 1891.	Average, 5 years, 1886-90.	Average, 5 years, 1881-85.	Average, 5 years, 1876-80.	Average, 5 years, 1871-75.	Rates per 100,000 population.				
						1891.	1886-90.	1881-85.	1876-80.	1871-75.
IV.—1. Developmental dis's of children.	1,284	1,833	1,231	861	545	60.0	91.5	69.4	55.7	41.3
2. Developmental dis's of women.	263	242	233	192	232	12.3	12.1	13.1	12.4	16.8
3. Developmental dis's of old people	1,014	980	733	557	400	47.4	48.9	41.3	36.0	30.3
4. Diseases of nutrition.	315	293	269	85	-----	14.7	14.6	15.2	5.5	-----
V.—1. Accident or negligence.	837	536	497	413	349	39.1	26.8	28.0	26.7	26.4
2. Homicide.	15	24	20	12	13	.7	1.2	1.1	.8	.9
3. Suicide.	79	98	81	62	44	3.7	4.9	4.6	4.0	3.3
4. Violent deaths.	62	379	300	246	205	2.9	18.9	16.9	15.9	15.8
CLASS I.—ZYMOTIC.	5,929	4,981	4,841	3,707	3,425	277.1	248.8	272.9	239.7	259.4
I.—ORDER 1. MIASMATIC.	5,855	4,939	4,799	3,665	3,373	273.6	246.6	270.5	237.0	255.5
1. { Small-pox	1	3	39	39	102	.0	.1	2.2	2.5	7.7
{ Chicken-pox	4	2	2	1	2	.2	.1	.1	.1	.2
2. Measles	225	232	169	98	138	10.5	11.6	9.5	6.3	10.5
3. Scarlet fever	400	284	444	404	541	18.7	14.2	25.1	26.1	41.0
4. Diphtheria.	1,060	977	1,321	961	192	49.5	48.8	74.5	62.2	14.5
5. Quinsy.	25	14	16	9	9	1.2	.7	.9	.6	.7
6. Croup.	288	429	345	236	159	13.4	21.4	19.4	15.3	12.1
7. Whooping-cough.	158	137	124	174	144	7.4	6.8	7.0	11.3	10.9
8. { Typhoid fever	684	603	541	428	543	31.9	30.1	30.5	27.7	41.1
{ Typhus fever	7	6	9	17	21	.3	.3	.5	1.1	1.6
{ Typho-malarial fever	16	36	26	7	1	.7	1.3	1.5	.4	.0
9. { Erysipelas	66	63	78	82	121	3.1	3.1	4.4	5.3	9.2
{ Septicæmia	172	149	92	8	3	8.0	7.4	5.2	.5	.2
10. Puerperal fever.	35	32	39	30	41	1.6	1.6	2.2	1.9	3.1
11. Carbuncle.	4	3	4	2	1	.2	.1	.2	.1	.0
12. Influenza.	1,076	258	8	7	8	50.3	12.9	.5	.5	.6
13. Dysentery.	89	156	149	173	283	4.1	7.8	8.4	11.2	21.4
14. Diarrhea.	292	388	339	263	343	13.7	19.4	19.1	17.0	26.0
15. Cholera infantum.	799	672	578	349	279	37.3	33.6	32.6	27.6	21.1
16. { Cholera morbus	45	47	44	29	24	2.1	2.3	2.5	1.9	1.8
{ Cholera	31	5	7	13	9	1.5	.2	.4	.8	.7
17. Ague.	132	174	179	124	158	6.2	8.7	10.1	8.0	12.0
18. Remittent fever.	105	123	127	111	183	4.9	6.1	7.2	9.1	13.9
19. Rheumatism.	141	147	117	73	71	6.6	7.3	6.6	4.7	5.4

TABLE 76.—CONTINUED.—Deaths and death-rates, five-year periods.

Causes of death.	Year, 1891.	Average 5 years, 1886-90.	Average 5 years, 1881-85.	Average 5 years, 1876-80.	Average 5 years, 1871-75.	Rates per 100,000 population.				
						1891.	1886-90.	1881-85.	1876-80.	1871-75.
I. ORDER 2. ENTHETIC.....	9	10	13	11	8	.4	.5	.7	.7	.6
1. Syphilis.....	6	8	10	9	6	.3	.4	.6	.6	.5
2. { Stricture of urethra.....				1	1				.0	.0
{ Stricture.....	1	2	2		1	.0	.1	.1		.0
3. Hydrophobia.....	2	1	1			.1	.0	.0		
4. Glanders.....										
I. ORDER 3. DIETIC.....	51	22	19	18	27	2.4	1.1	1.1	1.2	2.0
1. Privation.....	20				1	.9				.0
{ Purpura.....				1	1				.0	.0
2. { Rachitis.....	2	2	2	1	1	.1	.1	.1	.0	.0
{ Scurvy.....	2			1	1	.1			.0	.0
3. Delirium tremens (alcoholism).....		6	5	5	11		.3	.3	.3	.8
4. Intemperance.....	27	13	12	10	13	1.3	.6	.7	.6	1.0
5. Opium eating.....		1								
I. ORDER 4. PARASITIC.....	14	10	11	13	17	.7	.5	.6	.8	1.3
1. Thrush.....	8	4	6	5	9	.4	.2	.3	.3	.7
2. Worms.....	5	6	5	8	8	.2	.3	.3	.5	.6
3. Disease of scalp.....	1					0				
CLASS II.—CONSTITUTIONAL.....	3,390	3,221	2,829	2,395	2,102	158.0	160.8	159.4	154.9	159.2
II. ORDER 1. DIATHEtic.....	1,155	895	707	622	601	54.0	44.7	39.8	40.2	45.5
1. Gout.....	2		1			.1		.0		
2. { Anæmia.....	8	5	3	63	138	.4	.2	.2	4.1	10.5
{ Droopy.....	397	378	310	249	247	15.6	18.9	17.5	16.1	18.7
3. { Cancer.....	534	470	352	267	161	25.0	23.4	19.8	17.3	12.2
{ Tumor.....	157					7.3				
4. Noma (canker).....	28	24	29	28	42	1.3	1.2	1.6	1.8	3.3
5. Mortification.....	29	18	13	13	13	1.3	.9	.7	.8	.9
II. ORDER 2. TUBERCULAR.....	2,235	2,326	2,120	1,774	1,502	104.5	116.1	119.5	114.7	113.8
1. Scrofula.....	17	28	31	33	40	.8	1.4	1.7	2.1	3.0
2. Consumption of bowels.....	23	26	29	21	18	1.1	1.3	1.6	1.4	1.4
3. Phthisis (consumption of lungs).....	2,096	2,221	2,009	1,701	1,431	97.9	111.0	113.3	110.0	108.4
Hydrocephalus.....	9	9	9	7	5	.4	.4	.5	.5	.6
Meningitis.....	90	40	41	12	5	4.2	2.0	2.3	.5	.4

DEATH-RATES BY CLASSIFIED CAUSES, FIVE-YEAR PERIODS. 251

TABLE 76.—CONTINUED. —Deaths and death-rates, five-year periods.

Causes of death.	Year, 1891.	Average 5 years, 1886-90.	Average 5 years, 1881-85.	Average 5 years, 1876-80.	Average 5 years, 1871-75.	Rates per 100,000 population.				
						1891.	1886-90.	1881-85.	1876-80.	1871-75.
CLASS III.—LOCAL DISEASES	7,016	6,356	5,045	3,509	3,642	327.8	317.3	284.4	246.3	276.0
III. ORDER 1. NERVOUS SYSTEM	2,394	2,163	1,859	1,442	1,505	109.1	107.9	105.8	93.2	114.0
1. Cephalitis	315	343	308	264	275	14.7	17.1	17.4	17.1	20.8
2. Apoplexy	213	146	106	102	76	10.0	7.3	5.9	6.6	5.3
3. Paralysis	596	539	365	261	165	27.9	26.9	20.6	16.9	12.5
4. Insanity	39	29	19	17	16	1.8	1.5	1.1	1.1	1.2
5. Chorea	3	2	5	2	3	.1	.1	.3	.1	.2
6. Epilepsy	42	52	50	36	30	1.9	2.6	2.8	2.3	2.3
7. Tetanus	12	7	7	5	4	.6	.3	.4	.3	.3
8. Convulsions	547	445	385	297	277	25.6	22.2	21.7	19.2	20.9
9. { Brain disease	203	380	335	252	208	9.5	19.0	18.9	16.3	15.8
{ Droopy of brain	18	37	39	47	50	.8	1.8	2.2	3.0	3.8
10. Spinal fever	45	71	104	65	141	2.1	3.5	5.9	4.2	10.7
11. Spotted fever	—	1	4	1	37	—	0	.2	0	2.8
12. Meningitis	60	31	21	12	8	2.8	1.5	1.2	.8	.6
13. Meningitis, cerebro-spinal	12	*7	20	9	58	.6	.3	1.1	.6	4.4
14. Meningitis, spinal	81	69	89	37	61	3.9	3.5	5.0	2.4	4.6
15. Neuralgia	—	—	—	2	6	—	—	—	.1	.5
16. Spine disease	107	1	—	31	90	5.0	0	—	2.0	6.8
17. Spine, inflammation of	—	2	1	2	2	—	.1	0	.1	.1
18. Frightened	—	—	—	—	—	—	—	—	—	—
19. Disease of nerves	38	—	—	—	—	1.8	—	—	—	—
III. ORDER 2. ORGANS OF CIRCULATION	1,351	1,042	732	478	372	68.1	52.0	41.3	30.9	28.2
1. Pericarditis	70	82	78	69	63	3.3	4.1	4.4	4.5	4.8
2. Aneurism	4	18	12	2	3	.2	.9	.7	.1	.2
3. { Heart disease	902	942	641	409	307	42.2	47.0	36.1	26.4	23.3
{ "Heart failure"	375	—	—	—	—	17.5	—	—	—	—
4. Emboli	—	—	—	—	—	—	—	—	—	—
III. ORDER 3. RESPIRATORY ORGANS	1,695	1,591	1,214	1,000	1,013	79.2	79.4	68.4	64.7	76.7
1. Epistaxis	—	1	1	3	1	—	0	0	.2	0
2. Laryngitis	8	4	4	5	2	.4	.2	.2	.3	.1
3. Bronchitis	143	150	95	46	29	6.7	7.5	5.4	3.0	2.2
4. Pleurisy	24	30	22	26	30	1.1	1.5	1.2	1.7	2.3
5. Pneumonia	1,243	1,087	846	687	743	58.1	54.2	47.7	44.4	56.3
6. Asthma	77	65	52	31	21	3.6	3.3	2.9	2.0	1.6
7. Lung disease	183	237	153	192	185	8.5	11.8	10.3	12.4	14.0
8. Catarrh	17	19	10	10	2	.8	.9	.6	.6	.1

TABLE 76.—CONTINUED.—Deaths and death-rates, five-year periods.

Causes of death.	Year, 1891.	Average 5 years, 1886-90.	Average 5 years, 1881-85.	Average 5 years, 1876-80.	Average 5 years, 1871-75.	Rates per 100,000 population.				
						1891.	1886-90.	1881-85.	1876-80.	1871-75.
III. ORDER 4. DIGESTIVE ORGANS.....	1,027	944	771	595	546	48.0	47.1	48.5	38.4	41.4
1. Gastritis.....	52	59	68	55	31	2.4	2.9	3.6	2.6	2.4
2. Enteritis.....	355	345	317	340	227	16.6	17.2	17.9	15.5	17.2
3. Peritonitis.....	116	52	21	11	12	5.4	2.6	1.1	.7	.9
4. Ascites.....	6	2	3	4	6	.3	.1	.2	.3	.5
5. Ulceration of intestines.....	2	9	6	4	7	.1	.4	.2	.3	.5
6. Hernia.....	36	35	25	18	18	1.7	1.8	1.4	1.2	1.4
7. Obstruction of bowels.....	21	2	2	2	2	.9	.1	.2	.1	.2
8. Intussusception.....				2	2				.1	.1
9. Stricture of intestines.....		3	6	3	1		.4	.3	.2	.0
10. Fistula.....		2		1			.1		.0	
11. Stomach diseases.....	132	104	110	38	72	6.1	9.7	6.2	5.4	5.5
12. Pancreas disease.....										
13. Hepatitis.....		9	9	9	10		.4	.5	.6	.8
14. { Biliary calculus.....	6	2				.3	.1			
{ Jaundice.....	40	27	33	21	18	1.9	1.4	1.9	1.4	1.4
15. Liver disease.....	121	113	105	98	94	5.7	5.6	5.9	6.3	7.1
16. Spleen disease.....	4	4	3	4	4	.2	.2	.2	.2	.3
17. Bowel diseases, etc.....	105	74	62	39	34	4.9	3.7	3.5	2.5	2.6
18. Mouth disease.....	31	4	4		2	1.5	.2	.2		.1
19. Throat disease.....					5					.4
III. ORDER 5. URINARY ORGANS.....	516	443	336	196	159	24.1	22.1	18.9	12.1	9.8
1. Nephritis.....	14	21	14	13	14	.7	1.0	.8	.8	1.1
2. Ischuria.....										
3. Bright's disease of kidneys.....	257	215	158	41	12	11.6	10.7	8.9	2.7	.9
4. Diabetes.....	78	67	55	35	33	3.7	3.4	3.1	2.3	2.5
5. Calculus.....	12	12	15	24	23	.5	.6	.8	1.6	1.7
6. Cystitis.....	20	17	13	11	9	.9	.5	.7	.7	.7
7. Kidney diseases.....	135	111	82	62	38	6.3	5.6	4.6	4.0	2.9
III. ORDER 6. GENERATIVE ORGANS.....	22	20	22	20	17	1.0	1.0	1.2	1.3	1.3
1. { Ovarian disease.....	1			1	1	.0			.0	.0
{ Ovarian tumor.....		6	9	2	2		.3	.5	.5	.1
2. Diseases of uterus.....	18	15	13	11	13	.5	.7	.7	.7	1.0
3. Hydrocele.....	1					.0				
4. Breast disease.....	2					.1				

DEATH-RATES BY CLASSIFIED CAUSES, FIVE-YEAR PERIODS. 253

TABLE 76.—CONTINUED.—Deaths and death-rates, five-year periods.

Causes of death.	Year, 1891.	Average 5 years, 1886-90.	Average 5 years, 1891-95.	Average 5 years, 1876-80.	Average 5 years, 1871-75.	Rates per 100,000 population.				
						1891.	1886-90.	1891-95.	1876-80.	1871-75.
III. ORDER 7. ORGANS OF LOCOMOTION	14	11	12	11	5	.7	.5	.7	.7	.4
1. Arthritis.....		2	2	1	1		.1	.1	.0	.0
2. Joint diseases.....	14	9	10	11	5	.7	.4	.5	.7	.4
III. ORDER 8. INTEGUMENTARY SYSTEM	57	140	100	75	54	2.6	7.0	5.6	4.9	4.1
1. Phlegmon.....	48	50	35	31	23	2.2	2.5	1.9	2.0	1.7
2. Ulcer.....	4	10	7	7	3	.2	.5	.4	.4	.3
3. Skin diseases.....	5	80	57	38	27	.2	4.0	3.2	2.5	2.1
CLASS IV. DEVELOPMENTAL DIS.	2,876	3,348	2,467	1,695	1,167	134.4	167.0	139.0	109.6	88.4
IV. ORDER 1. DEV. DIS. OF CHILDREN	1,284	1,833	1,231	861	545	60.0	91.5	69.4	55.7	41.3
1. Still-born.....	1,090	1,153	859	730	368	50.9	57.6	48.4	47.2	27.9
2. { Infantile.....	18	528	242	28	64	.8	26.4	13.6	1.3	4.8
{ Premature birth.....	97	55	50	34	17	4.5	2.7	2.8	2.2	1.3
3. Cyanosis.....	2	2	1	3		.1	.1	.0	.2	
4. Spina bifida.....	1	2	1		1	.0	.1	.0		.0
5. Other malformations.....	7	8	9	6	6	.3	.4	.5	.4	.5
6. Teething.....	55	79	66	58	90	2.6	4.0	3.7	3.8	6.8
7. Injury at birth.....	14	5	2	1		.7	.2	.1	.0	
IV. ORDER 2. DEV. DISEASES OF WOMEN	263	242	233	192	222	12.3	12.1	13.1	12.4	16.3
1. { Dysmenorrhea.....				1	1				.0	.0
{ Turn of life.....	6	7	6	5	3	.3	.3	.3	.3	.2
{ Child-birth.....	245	226	216	176	207	11.5	11.3	12.2	11.4	15.7
2. { Abortion.....	10	8	10	2	7	.5	.4	.6	.5	.5
{ Uterine hemorrhage.....	2	1	1	3	3	.1	.0	.0	.2	.2
IV. ORDER 3. DEV. DIS. OF OLD PEOPLE	1,014	980	733	557	400	47.4	48.9	41.3	36.0	30.3
1. Old age.....	1,014	980	733	557	400	47.4	48.9	41.3	36.0	30.3
IV. ORDER 4. DISEASES OF NUTRITION	315	293	269	85		14.7	14.6	15.2	5.5	
1. Atrophy and debility.....	315	293	269	85		14.7	14.6	15.2	5.5	
CLASS V. VIOLENT DEATHS	993	1,084	898	733	613	46.4	51.8	50.6	47.4	46.4
V. ORDER 1. ACCIDENT OR NEGLIGENCE	837	534	497	413	349	39.1	26.7	28.0	26.7	26.4
1. Fractures and contusions.....	35	121	99	58	51	1.6	6.0	5.6	3.8	3.9
2. Wounds.....	2	27	27	17	18	.1	1.3	1.5	1.1	1.4
3. Burns and scalds.....	69	67	87	64	70	3.2	3.3	4.9	4.1	5.3
4. Poison.....	31	32	36	31	26	1.5	1.6	2.0	2.0	1.9

TABLE 76.—CONCLUDED.—Deaths and death-rates, five-year periods.

Causes of death.	Year, 1891.	Average 5 years, 1886-90.	Average 5 years, 1881-85.	Average 5 years, 1876-80.	Average 5 years, 1871-75.	Rates per 100,000 population.				
						1891.	1886-90.	1881-85.	1876-80.	1871-75.
5. Drowning	146	154	141	140	102	6.8	7.7	7.9	9.0	7.7
6. Suffocation	23	28	24	22	16	1.1	1.4	1.4	1.4	1.2
7. Railroad accidents	86					4.0				
8. Other casualties	445	106	84	81	66	20.8	5.3	4.7	5.3	5.0
V. ORDER 2. HOMICIDE	15	24	20	12	13	.7	1.2	1.1	.7	.9
V. ORDER 3. SUICIDE	79	98	81	62	44	3.7	4.9	4.6	4.0	3.3
V. ORDER 4. VIOLENT DEATHS NOT INCLUDED ABOVE	62	379	300	246	208	2.9	18.9	16.9	15.9	15.8
Unclassified	107	82	77	59	39	5.0	4.1	4.3	3.8	3.0
Causes unknown	1,768	1,254	1,299	1,356	1,381	82.6	62.6	73.2	87.7	104.7

The rates per 100,000 population given in Table 76 afford the readiest means of comparison with the statistics of other States and countries. Some very interesting relations are shown between them and the corresponding figures, taken from official publications of Massachusetts and England, in Table 77.

It should be carefully borne in mind, in making such comparisons between the registration rates of Michigan and those of either Massachusetts or England, that the figures for Michigan represent somewhat over one-half of the deaths that actually occurred in the State, while those of Massachusetts and England approximate closely to their actual mortality.*

With this proviso much may be learned of interest in regard to the changes in death-rates from certain diseases in Michigan, as compared with those of other localities, during the past twenty years.

* See page 180, preceding, for reason of imperfection of our present system of registration.

DEATH-RATES IN MICHIGAN, MASSACHUSETTS AND ENGLAND. 255

TABLE 77.—*Number of deaths per 100,000 population, from certain specified causes, according to the returns,* in Michigan for the five-year periods 1871-75, 1876-80, 1881-85, 1886-90, compared with the corresponding rates for Massachusetts and England.*

Causes of death.	State or country.	Deaths per 100,000 population.			
		Five years, 1871-75.	Five years, 1876-80.	Five years, 1881-85.	Five years, 1886-90.†
All causes.....	Michigan.....	987.1	889.5	983.8	1,012.5
	Massachusetts.....	2,227.3	2,016.8	2,187.7	2,152.4
	England.....	2,196.2	2,079.1	1,929.9	1,548.3
Consumption.....	Michigan.....	109.4	110.0	113.8	111.0
	Massachusetts.....	355.5	320.0	324.7	289.4
	England.....	221.8	204.0	182.0	159.8
Pneumonia.....	Michigan.....	56.3	44.4	47.7	54.2
	Massachusetts.....	150.3	146.3	165.7	178.4
Heart diseases.....	Michigan.....	23.8	26.4	36.1	47.0
	Massachusetts.....	81.7	91.7	121.8	151.9
	England.....	125.7	141.5	146.0	164.2
Diphtheria.....	Michigan.....	14.5	62.2	74.5	48.8
	Massachusetts.....	32.4	127.7	68.2	64.7
	England.....	12.1	12.2	15.6	16.4
Croup.....	Michigan.....	12.1	15.3	19.4	21.4
	Massachusetts.....	32.3	35.7	30.7	24.3
	England.....	18.4	15.4	16.2	12.8
Small-pox.....	Michigan.....	7.7	2.5	2.2	.1
	Massachusetts.....	28.1	1.3	1.3	.2
	England.....	41.1	7.8	7.8	1.6
Measles.....	Michigan.....	10.5	6.8	9.5	11.6
	Massachusetts.....	14.9	8.8	11.0	11.1
	England.....	87.3	38.5	41.0	46.9
Whooping-cough.....	Michigan.....	10.9	11.3	7.0	6.8
	Massachusetts.....	20.3	17.9	13.4	14.1
	England.....	49.9	52.7	45.7	42.8
Scarlet fever.....	Michigan.....	41.0	26.1	25.1	14.2
	Massachusetts.....	88.1	42.0	27.5	18.4
	England.....	75.9	68.0	43.4	23.7
Typhoid fever.....	Michigan.....	41.1	27.7	30.5	30.1
	Massachusetts.....	84.7	46.3	51.5	44.1
	England.....	37.4	27.7	21.5	17.7

* The returns for Michigan, under the present system of registration, are very imperfect. An idea of the deficiency that exists may be gained by comparing the number of deaths from all causes, as given above, for Michigan, Massachusetts and England. See suggestions in regard to making comparisons for particular diseases, on page 257.

† For England, four years, 1886-89, are included here.

TABLE 77. CONTINUED. *Death-rates in Michigan, Massachusetts and England.*

Cause of death.	State or country.	Deaths per 100,000 population.			
		Five years, 1871-75.	Five years, 1876-80.	Five years, 1881-85.	Five years, 1886-90.
Cholera infantum	Michigan	21.1	22.6	32.6	33.6
	Massachusetts	162.9	107.7	109.3	108.9
Diarrhea and dysentery	Michigan	47.4	28.2	27.5	27.2
	Massachusetts	54.5	50.8	44.6	41.4
	England	100.0	83.2	65.2	67.2
Convulsions	Michigan	20.9	19.2	21.7	22.2
	Massachusetts	39.4	35.5	39.1	42.8
	England	111.1	97.1	84.4	76.3
Malarial diseases	Michigan	12.0	8.0	10.1	8.7
	Massachusetts .....	.7	.4	1.3	1.5
	England .....	.8	.7	1.1	.7
Puerperal fever	Michigan	3.1	1.9	2.2	1.6
	Massachusetts	5.3	4.6	6.4	3.8
	England	8.7	6.2	9.3	7.7
Krysipelas	Michigan	9.2	5.3	4.4	3.1
	Massachusetts	15.0	12.1	12.9	9.3
	England	10.6	8.1	8.3	5.6
Rheumatism	Michigan	5.4	4.7	6.6	7.3
	Massachusetts	11.3	10.1	11.6	10.2
	England	12.7	13.9	13.2	12.1
Bright's disease	Michigan .....	.9	3.7	5.9	10.7
	Massachusetts	16.7	22.6	22.9	48.3
Diabetes	Michigan	2.5	2.3	3.1	3.4
	Massachusetts	3.7	4.3	3.7	7.6
	England	3.6	4.0	3.1	6.1
Cancer	Michigan	12.2	17.3	19.5	23.4
	Massachusetts	37.6	46.4	36.3	62.6
	England	44.6	49.3	34.3	61.1
Intemperance	Michigan	1.5	.9	1.0	.9
	Massachusetts	3.3	4.3	.7	6.2
	England	3.5	4.2	6.5	3.1
Tubercular disease	Michigan	46.4	67.6	30.6	31.5
	Massachusetts	30.0	77.4	56.6	50.2
	England	57.1	51.0	37.6	33.0
Scirrhous	Michigan	3.3	4.0	4.6	4.9
	Massachusetts	5.2	5.4	9.6	15.3
	England	9.3	7.6	7.6	12.9

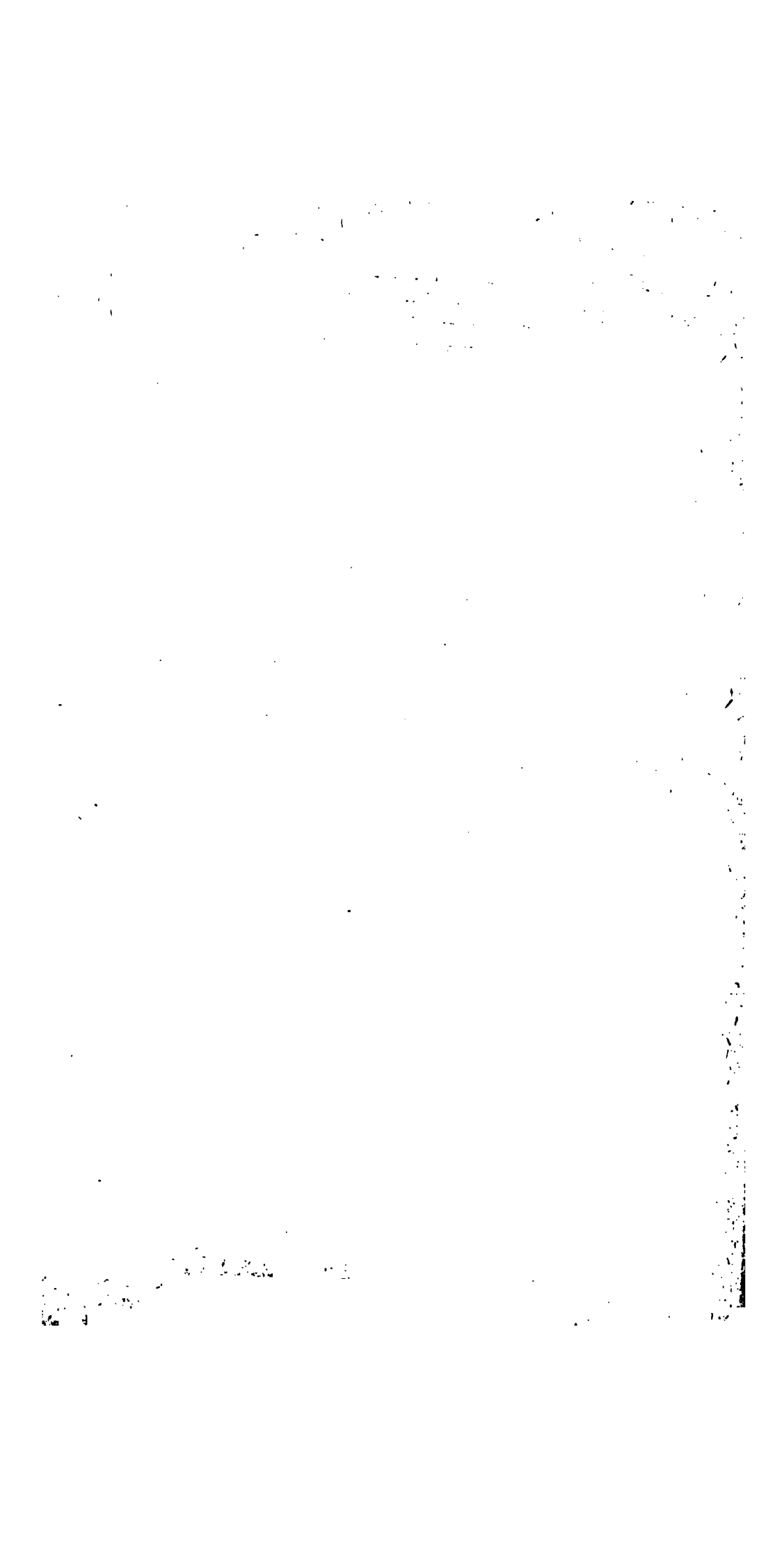
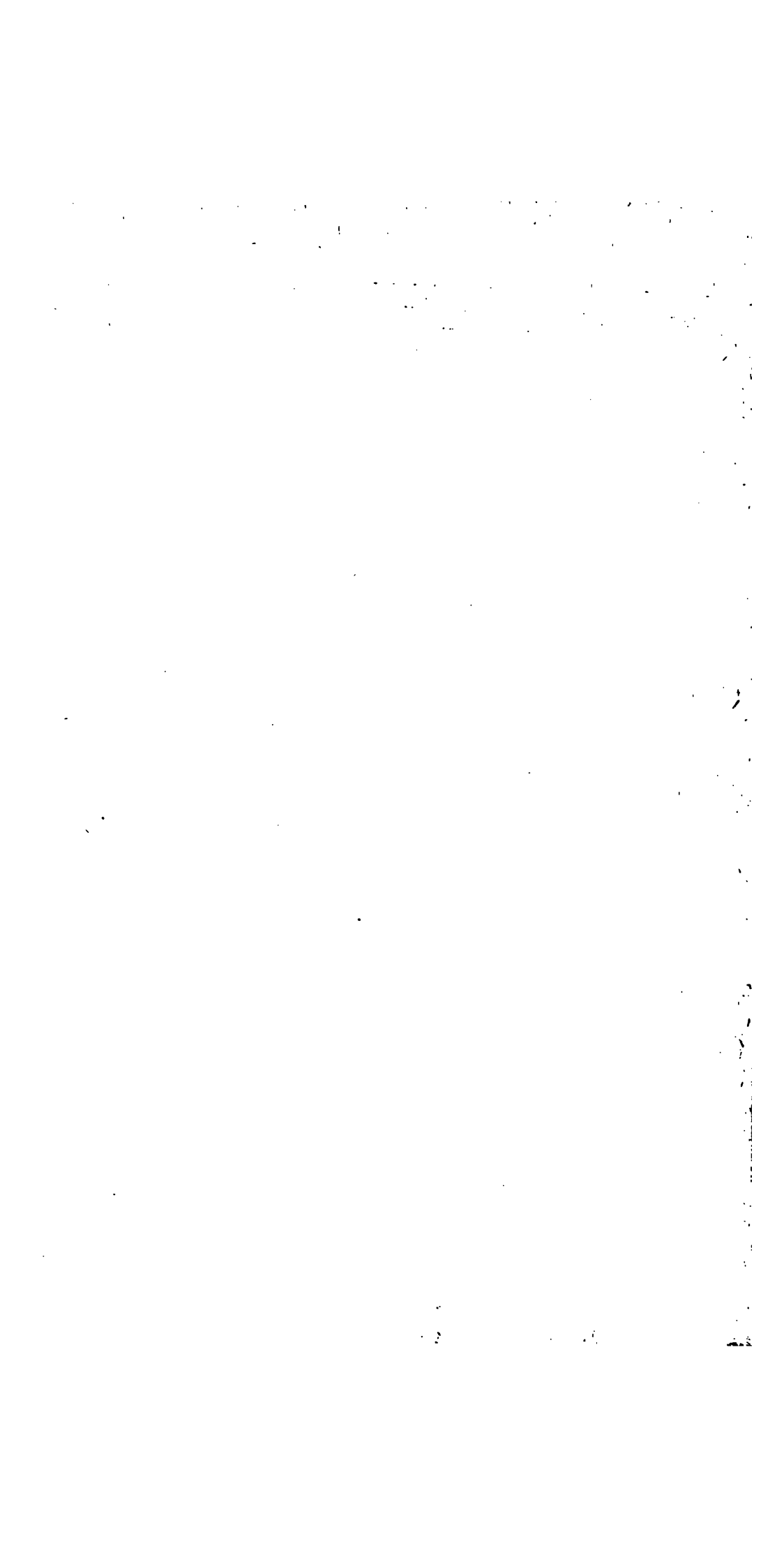


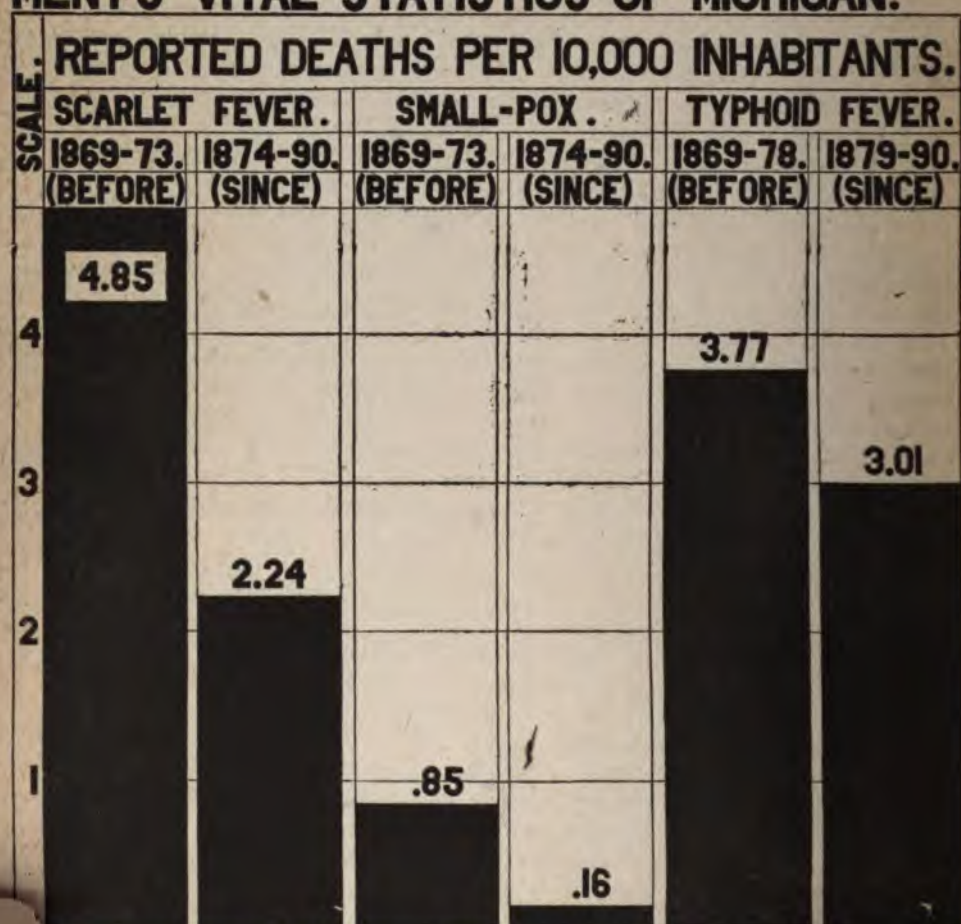
TABLE 77.—CONTINUED.—*Death-rates in Michigan, Massachusetts and England.*

Causes of death.	State or country.	Deaths per 100,000 population.			
		Five years, 1871-75.	Five years, 1876-80.	Five years, 1881-85.	Five years, 1886-90.
Cholera infantum	Michigan	21.1	22.6	32.6	33.6
	Massachusetts.....	162.9	107.7	109.3	108.9
Diarrhea and dysentery	Michigan.....	47.4	28.2	27.5	27.2
	Massachusetts.....	54.5	50.8	44.6	41.4
	England.....	100.0	88.2	65.2	67.2
Convulsions.....	Michigan.....	20.9	19.2	21.7	22.2
	Massachusetts.....	39.4	35.5	39.1	42.9
	England.....	111.1	97.1	84.4	76.3
Malarial diseases.....	Michigan.....	12.0	8.0	10.1	8.7
	Massachusetts.....	.7	.4	1.3	1.5
	England.....	.8	.7	1.1	.7
Puerperal fever.....	Michigan.....	3.1	1.9	2.2	1.6
	Massachusetts.....	5.3	4.6	6.4	3.8
	England.....	8.7	6.2	9.3	7.7
Erysipelas	Michigan.....	9.2	5.3	4.4	3.1
	Massachusetts.....	15.0	12.1	12.9	9.8
	England.....	10.6	8.1	8.3	5.6
Rheumatism	Michigan.....	5.4	4.7	6.6	7.3
	Massachusetts.....	11.3	10.1	11.6	10.2
	England.....	12.7	13.9	13.2	12.2
Bright's disease	Michigan.....	.9	2.7	8.9	10.7
	Massachusetts.....	16.7	22.6	32.9	48.8
Diabetes.....	Michigan.....	2.5	2.3	3.1	3.4
	Massachusetts.....	3.7	4.3	5.7	7.6
	England.....	3.6	4.0	5.1	6.1
Cancer.....	Michigan.....	12.2	17.3	19.8	23.4
	Massachusetts.....	37.6	46.4	56.3	62.6
	England.....	44.6	49.5	54.5	61.1
Intemperance	Michigan.....	1.8	.9	1.0	.9
	Massachusetts.....	6.9	4.5	..	6.2
	England.....	3.8	4.2	4.8	5.1
Violent deaths	Michigan.....	46.4	47.4	50.6	51.6
	Massachusetts.....	90.0	77.4	85.6	84.2
	England.....	67.1	63.0	57.6	53.0
Suicide.....	Michigan.....	3.3	4.0	4.6	4.9
	Massachusetts.....	8.2	8.4	9.4	8.3
	England.....	6.8	7.4	7.4	7.9



MICHIGAN STATE BOARD OF HEALTH EXHIBIT.

**LIVES SAVED BY PUBLIC-HEALTH WORK.
COMPARISON OF DEATH-RATES IN MICHIGAN
FROM SCARLET FEVER AND SMALL-POX BE-
FORE AND SINCE THE STATE BOARD OF
HEALTH WAS ESTABLISHED AND FROM TY-
PHOID FEVER BEFORE AND SINCE ITS RE-
STRICTION WAS UNDERTAKEN BY THE STATE
BOARD. COMPILED FROM STATE DEPART-
MENT'S "VITAL STATISTICS" OF MICHIGAN.**



LIVES SAVED FROM: SCARLET FEVER (7 YEARS) 7,265; SMALL-POX (17 YEARS) 1,821; TYPHOID FEVER (12 YEARS) 1,671.

Bar-graph and design by the State Board of Health in cooperation of Henry H. Butler

TABLE 77.—CONCLUDED.—*Death-rates in Michigan, Massachusetts and England.*

Causes of death.	State or country.	Deaths per 100,000 population.			
		Five years, 1871-75.	Five years, 1876-80.	Five years, 1881-85.	Five years, 1886-90.
Homicide	{ Michigan .....	.9	.7	1.1	1.2
	{ Massachusetts	1.7	1.1	1.0	.8
	{ England	1.2	1.4	1.3	1.1
Still-born	{ Michigan	27.9	47.2	48.4	57.6
	{ Massachusetts	88.2	75.7	85.5	96.5
Old age	{ Michigan	30.3	30.0	41.3	48.9
	{ Massachusetts	106.8	97.0	107.8	96.5

The death-rate from consumption has remained nearly stationary in Michigan during the four five-year periods. In that time the mortality from this cause would appear to have diminished in a very large degree both in Massachusetts and England.

To obtain a rough idea of the absolute mortalities, suppose the rates given above for Michigan to be increased by 100 per cent. This is certainly enough to make up for the deficiency of registration in our State and, indeed, throws the margin of error upon the other side—that of over-statement of the Michigan death-rate from this disease. We have the following figures for the successive periods: 216.8, 220.0, 226.6, 222.0. These figures agree closely with the rate given for England during the years 1871-75, but do not show a corresponding decrease for the succeeding years.

In Massachusetts such a decrease in the mortality from phthisis is very apparent, but the death-rate therefrom, despite such amelioration, remains much higher than the English or the (over-corrected) Michigan death-rate. It may be safely said that 50 per cent more deaths occur in that state than in Michigan from consumption.

The deaths in Michigan from this disease per 1,000 from known causes were, or the period 1886-90, 116.9. As compared with the rate for the United States in 1880 given in the Mortality Report of the Tenth Census (the mortality statistics of the Eleventh Census are not yet available), which was 126.8 deaths from consumption per 1,000 from known causes, this State is seen to be somewhat better than the average in this respect.

It is a matter of common knowledge that heart diseases, or, certainly, the returns of such diseases as causes of death, have become vastly more frequent in recent years. The figures presented in this table show to what a degree this change has prevailed. The rate of deaths from heart diseases is seen to have more than doubled in Michigan in the twenty years studied; to have very nearly doubled in Massachusetts, and to have very largely increased, though not quite in the same proportion, in England. The figures given for England include all diseases of the circulatory system and so are a little too large as compared with those for Michigan and Massachusetts, which refer to heart diseases alone.

Passing to the actively infectious diseases, small-pox is seen to present a very similar decline in each locality studied during the periods in question. It has now become, except for the possibilities attending a failure to maintain its present well-restricted condition, a quite insignificant disease so far as causation of mortality is concerned. Measles and whooping-cough, diseases regarded with far less apprehension, greatly exceed it in this respect. The rate in Michigan during the five years 1886-90 was only

.1 per 100,000. Assuming a population for that time of 2,000,000 persons, this would correspond to only two deaths per annum. For the five years 1871-75, assuming an equal population, the number of deaths from this cause would be 154. The reduction has been continuous in this State, and, for the last period noted, has been greater proportionately than in Massachusetts or England.

Diphtheria caused less deaths in the last period, 1886-90, than in any other except the first, the number for which is probably affected by the fact that the term was in less common use than at present. The disease is seen to be of much less importance in England as a cause of death than in this country. The reverse is true concerning measles and whooping-cough, which cause over double the mortality there that they do here.

Measles is seen to be increasing somewhat rapidly—from 1876-80 to 1886-90 the death-rate has nearly doubled—and the fact of its European importance should lead us to enforce more careful restrictive measures.

Typhoid fever has shown some slight decrease in Michigan and Massachusetts in recent periods. The death-rate remains much higher for both than that of England from the same disease.

Malarial diseases are still somewhat high, as might be expected of a comparatively recently settled State. The death-rate from this cause is decreasing. That the State is not deserving of the bad name it early acquired in this respect comparison of the mortality from this cause in Michigan with that of the country at large will show. The number of deaths in Michigan from malarial fever, intermittent fever, ague, congestive chills, etc., per 1,000 deaths from known causes, was only 9.2 for the five year period, 1886-90. For the United States as a whole the latest statement (Tenth Census) was 28.1 per 1,000 deaths from known causes. Thus the mortality in Michigan is only about one-third of the average rate.

The progressive increase in the mortality from cancer is a phenomenon that has excited much interest. It is seen to be even more marked in Michigan than in Massachusetts or England. Our rate of mortality from this cause has nearly doubled in twenty years.

CAUSES OF DEATH—ALPHABETICAL LIST.

In Table 78 the nosological classification previously employed is dispensed with, and the diseases are arranged solely in alphabetical order. For the year 1891 the distribution of deaths from each cause is given by months and also according to the ages of decedents, sex being specified in each case. For comparison the total deaths, by sex, of the five years preceding are also given in parallel columns.

Table 78 may be regarded as a somewhat more elementary table than Table 74, standing in closer relation to the returns. Many of the titles in Table 74 embrace several titles of Table 78. Thus the "rheumatism" of page 202 includes the headings "rheumatism," "rheumatic fever," "inflammatory rheumatism," "sciatic rheumatism," "rheumatism of heart," and "lumbago" in Table 78. Very similar consolidations occur in many other cases so that it becomes advisable, if only the total number of decedents from any disease in the year be desired, to invariably refer to Table 74. When a statement by months or sex is necessary, Table 78 should be consulted.

It may be well to note that the list of the fifteen principal causes of death in Table 82 and the ten causes of death (Tables 83, 84), as also the meteorological tables, are based upon Table 78.

TABLE 78.—*Exhibiting by sex, by months, by specified causes in alphabetical order, and by ages in periods of years, the number of deaths returned for the year 1891; also, by sex and specified causes, the number of deaths returned for each of the years, 1886-1891, inclusive. (Still-births included.)*

	9	8	7	6	5	4	3	2	1	0	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599
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CAUSES OF DEATH, ALPHABETICAL LIST.

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[illegible]

TABLE 78.—CONTINUED.—Causes of death—Alphabetical list.

[illegible]

CAUSES OF DEATH, ALPHABETICAL LIST.

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[illegible]

CAUSES OF DEATH, ALPHABETICAL LIST.

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Females	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
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TABLE 78.—CONTINUED.—*Causes of death—Alphabetical list.*

Sex.		Months, 1891.												Years.						Causes of death.	Ages in periods of years, 1891.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	1891.	1890.	1889.	1888.	1887.	1886.		Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Females										1			1	1	1	2	2	3		Liver, Ulceration of	1					1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

CAUSES OF DEATH, ALPHABETICAL LIST.

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[illegible]

TABLE 78.—CONTINUED.—Causes of death—Alphabetical list.

[illegible]

Totals	57 54 88	102 96	76 63 85	82 94	90 120	71 014	980	965 1174	917 865	Old age	1 1	1 1	8 27	136	204	631 15
Males	28 30 45	51 49	48 31 49	35 46 48	57 4	531 510	512 586	468 427		"	1	1	4 14	61	99	333 9
Females	29 24 43	51 47	28 32 36	47 48 42	63 3	493 470	453 588	449 438		"	1	1	4 13	75	105	298 6
Males							1	1	1	Opium eating						
Females										"						
Females							1		1	Ovaries, Disease of						
Males							6	3	1	Overdose of medicine	1	1	1	1		
Females							4	2	1	"			1	2	1	
Males							2			Overheating	1					
Males							1	1	1	Overwork						
Females									1	"						
Females										Pancreas, Disease of						
Totals	41 57 43	57 47	32 50 52	44 52 52	57	564 558	533 532	450 435		Paralysis	6	1	3	4	5	9 16
Males	24 17 35	59 53	16 23 30	26 35 33	30	310 315	298 290	251 290		"	3	1	2	3	1	5
Females	17 40 35	24 16 27	22 18 26	19 27	27	254 243	235 232	199 195		"	3	1	1	3	4	8
Males						4				Paralysis, Creeping						
Females										"						
Males						19	5	14		Paralysis, General			1	3	5	2
Females						5	4	1	1	"			2	1		
Males						1				Parotid gland, Abscess of						
Females						1				Pemphigus						
Totals	7 9 12	9 10 12	6 5 11	9	9	114 98	50 46	35 32		Peritonitis	2	2	6	7	16	11
Males	4 3 3	4 2 5	4 6 4	5	1	40 50	20 21	13 13		"	2	2	3	9	2	1
Females	3 6 8	7 5 6	4 6 10	7	7	74 48	30 25	22 19		"	3	4	7	0	12	4
Males						1				Peritonitis, Chronic						
Females						1				"						
Females						1				Peritonitis, Puerperal						

TABLE 78.—CONTINUED.—Causes of Death—Alphabetical list.

[illegible]

CAUSES OF DEATH, ALPHABETICAL LIST.

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Females.	3	3	8	5	7	9	3	5	2	2	4	47	45	70	54	38	64	Spine, Disease of.	17	4	6	3	2	2	3	1	2	1	1	2				
Males													2	1				Spine, Inflammation of																
Females							1					1		1		2	2	" "																
Males					1							1	3	1	3			Spine, Injury of							1									
Females				1								1	1	1				" "						1										
Males						2			1	1		4	1		2			Spine, Paralysis of						1	1	1	1							
Females						1						1	1		1	2		" "																
Totals					1		1		1	1		4	1	6	4	1	8	Spleen, Disease of						1	2		1							
Males					1				1			2	1	3	3	1	5	" "						1			1							
Females						1					1	2		3	1		3	" "							2									
Males		1										1	2				1	Starvation.																
Females	1											1	1		1	1		" "													1			
Totals	94	82	94	108	96	82	98	80	76	83	114	1 000	1397	1202	1353	897	909	Still-born.														1093		
Males	58	41	55	55	50	47	44	55	41	35	46	61	553	757	692	809	508	"														583		
Females	37	39	34	47	39	31	27	36	32	35	30	47	484	537	493	534	359	"														484		
Unknown	4	2	5	6	7	4	11	7	7	6	7	6	1	73	53	27	15	"														73		
Totals	1		2			3	1					1	8	7	4	5	4	Stomach, Abscess of						1	1	1	1	1	1	1	1	1		
Males	1					2	1					1	5	4	4	3	2	" "								1	1	1	1	1	1			
Females			2			1						3	3		2	2	1	" "						1								1		
Males							1		1			2						Stomach, Atrophy of														1		
Males								1				1						Stomach, Cancer of														1		
Males			2									2						Stomach, Congestion of						2								2		
Females	1											2						" "							1							1		
Males			1	1								2						Stomach, Consumpt'n of														1		
Females												2						" "														1		
Totals	2	2	4	3	4	3	2	6	1	5	5	6	43	60	38	44	32	Stomach, Disease of							1	2	1	1	4	2	4	3	6	2
Males	2	2	2	2	2	1		3		4	5	5	28	32	26	27	16	" "								2	1		3	2	1	3	3	4

VITAL STATISTICS OF MICHIGAN. 1921.

TABLE 78. CONTINUED. Causes of death. Alphabetical list.

[illegible]

[illegible]

VITAL STATISTICS OF MICHIGAN, 1891.

TABLE 78.—CONTINUED.—Causes of death—Alphabetical list.

[illegible]

Age	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	122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CAUSES OF DEATH, ALPHABETICAL LIST.

[illegible]

TABLE 78.—CONCLUDED.—Causes of death.—Alphabetical list.

Sex.	Months, 1891.												Years.	Causes of death.	Ages in periods of years, 1891.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.			Unknown.	1891.	1890.	1889.	1888.	1887.	1886.	Years.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
																						Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	(Unknown).																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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* The Registration Report for 1890 stated that 832 deaths were caused by pneumonia and 535 by lung disease. The discrepancy between these figures and those given for the years immediately preceding suggested that some difference in methods of compilation might be responsible instead of there being an actual difference in the prevalence of the diseases or rather in the groups of causes classed under these titles. Pneumonia should include all deaths returned from "inflammation of the lungs" and from "lung fever" as well as those returned directly as such. A re-examination of the returns for the year 1890, making the grouping indicated above in order to make the results comparable with previous years, gave a total of 1,162 deaths from pneumonia and left a remainder of 225 deaths to be ascribed to the "lung disease" of the classification. In a similar manner it was found that the number of deaths from inflammation of the brain, "cephalitis," of Table VI, should be 318 for the year 1890 instead of 57; "brain diseases" were 195 instead of 456. It should be noted that "congestion of the brain" is separately stated for the year 1891. It should be added to the number given for "brain disease" in making comparisons with previous years. The same is true of "congestion of the lungs" which is included in "lung disease" in all previous years.

† See remarks on p. 190 for explanation of the great apparent decrease in deaths from this cause in 1890 and 1891.

Table 79 is really an appendix to the preceding table, specifying the particular manner of death in the large number of fatal accidents that are classed under the heading "casualty." It should be noted that this heading includes only those cases that are not of sufficient numerical importance to be stated separately. Thus for deaths from railroad accidents, drowning, etc., see those titles in Table 78. See also Class V in the nomenclological list, Table 74, where "other casualties" includes the "casualty" of Table 78 and also injury from falling tree, freezing, gunshot wounds, and death from lightning. The total number thus included is 445, of which the miscellaneous casualties of Table 80 constitute 374.

TABLE 79.—Deaths in Michigan in 1891 compiled as "Casualty."

Casualty—Causes as returned, 1891.	No.	Casualty—Causes as returned, 1891.	No.
Total number tabulated as "Casualty" in Table 78.....	374	Explosion (unspecified).....	3
Accidental—Causes unspecified.....	212	Injury from fall.....	43
Accident in shingle mill.....	1	Injury by cable car.....	2
Accident in saw mill.....	11	Injury by electric car.....	1
Accident in mine.....	32	Injury by street car.....	6
Accident in iron works.....	1	Injury by machinery.....	1
Accident on vessel.....	1	Killed by horse.....	20
Accident in lath mill.....	1	Killed by fall of earth in brick-yard.....	1
Accident in factory.....	1	Killed by logs.....	5
Accident in house-moving.....	1	Killed by bull.....	1
Bursting of emery wheel.....	1	Runaway.....	12
Crushed by elevator.....	1	Run over by wagon.....	5
Explosion of soda fountain cylinder.....	1	Run over by sled.....	1
Explosion of kerosene.....	1	Struck by board.....	1
Explosion of dynamite.....	2	Swallowed a pin.....	1
Explosion of gasoline.....	1	Thrown from carriage.....	3

The total number of deaths from violent causes in Michigan in 1891 was 837, excluding 15 homicides, 79 suicides and 62 indefinite returns of violent deaths. Thirty-five deaths resulted from fractures; sixty-nine were the results of burns and scalds; thirty-one deaths resulted from poison without (stated) suicidal intent (six suicidal deaths were caused by poison); drowning was the cause of 146 deaths besides 3 suicides by this means; railroad accidents and injuries of various descriptions were responsible for 86 deaths. Of the 374 deaths included in Table 79, the largest number from any one definite class of causes was the number due to mining accidents, 32; horses and run-aways together give an equal number. Explosion of kerosene and explosion of gasoline caused each one death. Probably more from this cause are included under "burns" but were not so specified in the returns, as should be done whenever such is the case.

Table 80 presents the evidence in regard to the distribution of cancers among the various organs and parts of the body according to the returns for twenty years, 1872-91. Of the total deaths, 6,664, reported for that time, 3,820, or 57.3 per cent, were of females. In over one-half of the number the locality affected was not reported. Of the number for which the seat of the cancer was specified, 3,294, by far the largest group was cancer of the stomach, which caused 1,684 deaths or 51.1 per cent of all specified cases. The male decedents were in excess in this group, and also in cancer of the face, liver and mouth. The excess of females is caused by the large number of cases of cancer of the breast, and uterus, and by the large proportion of females in the unspecified cancers, many of which were probably of the female generative organs.

TABLE 80.—Deaths from cancer in Michigan returned for the years 1872-1891, indicating part of body affected.

Part affected.	Totals.	Males.	Females.	Part affected.	Totals.	Males.	Females.
Aggregate, twenty years, 1872-91	6,664	2,844	3,820	Cancer of leg	19	13	6
Cancer of arm	6	3	3	Cancer of lip	3	3	—
Cancer of back	1	1	—	Cancer of liver	149	82	67
Cancer of bladder	18	15	3	Cancer of lungs	19	8	10
Cancer of bone	1	1	—	Cancer of mouth	83	55	28
Cancer of bowels	125	48	77	Cancer of neck	28	20	8
Cancer of brain	2	1	1	Cancer of nose	2	2	—
Cancer of breast	404	24	380	Cancer of œsophagus	8	1	2
Cancer of ear	3	2	1	Cancer of pancreas	3	2	1
Cancer of eye	16	8	8	Cancer of rectum	28	15	13
Cancer of face	195	144	51	Cancer, rose	9	4	5
Cancer of foot	4	4	—	Cancer of shoulder	2	2	—
Cancer of gall bladder	1	—	1	Cancer of side	13	2	11
Cancer of groin	4	3	1	Cancer of spine	5	2	3
Cancer of hand	5	4	1	Cancer of stomach	1,684	996	688
Cancer of head	33	19	14	Cancer of throat	92	58	34
Cancer of heart	6	2	4	Cancer of testicles	3	3	—
Cancer of hip	1	1	—	Cancer of tongue	21	11	10
Cancer, internal	32	9	23	Cancer (unspecified)	3,370	1,274	2,096
Cancer of jaw	1	1	—	Cancer of urethra	1	—	1
Cancer of kidneys	7	6	1	Cancer of uterus	283	—	283

As already pointed out in reference to Table 74, many deaths returned from "tumor" are due to cancers. For the purpose of comparison, the deaths returned from each of these causes in 1891 are arranged in parallel columns in the following table:

DEATHS FROM CANCERS AND TUMORS.

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TABLE 80A.—Deaths from cancers and tumors in Michigan during the year 1891.

Part of body affected.	Cancers.			Tumors.		
	Total.	Males.	Females.	Total.	Males.	Females.
Total deaths from cancers	584	214	320			
Total deaths from tumors				157	38	119
Back, cancer of	1		1			
Back, tumor of				1		1
Bladder, cancer of	1	1				
Bone cancer	1	1				
Bowels, cancer of	6	5	1			
Bowen's, tumor of				6	1	5
Brain, cancer of	1	1				
Brain, tumor of				5	2	3
Breast, cancer of	16		16			
Eye, cancer of	1	1				
Face, cancer of	11	9	2			
Foot, cancer of	1	1				
Hand, cancer of	2	2				
Head, cancer of	1		1			
Head, tumor of				4	3	1
Jaw, cancer of	1	1				
Lip, cancer of	1	1				
Liver, cancer of	9	3	6			
Liver, tumor of				1		1
Lungs, cancer of	4	1	3			
Mouth, cancer of	4	2	2			
Neck, cancer of	2	1	1			
Neck, tumor of				1		1
Ovarian tumor				12		12
Rectum, cancer of	3	1	2			
Side, cancer of	1		1			
Side, tumor of				3		3
Stomach, cancer of	138	64	74			
Stomach, tumor of				9	2	7
Throat, cancer of	9	5	4			
Throat, tumor of				2	1	1
Tongue, cancer of	1	1				
Unspecified cancer*	318	113	205			
Unspecified tumor				109	29	80
Uterus, cancer of	6		6			
Uterus, tumor of				4		4

* Includes 3 epitheliomas, 2 carcinomas, 1 sarcoma, 3 scirrhi, 1 "rod cancer," 1 "blood cancer" unspecified as to location.

SUICIDES IN MICHIGAN, 1891.

The facts in regard to suicides occurring in 1891, are shown in the following tables, together with the aggregate for eighteen years, 1874-91. Table 81 compares the number of suicidal deaths returned, by months, for eighteen years. The total for the year, 79, is less than the average for the preceding ten years, 89.5. In the order of the months, November and April come first, while August shows an unusually small number. A larger proportion of females—30 out of 79—is recorded than usual. As regards marital condition about the same relations are shown as in previous years.

Table 81A exhibits the occupations recorded for suicidal decedents during the period of eighteen years. The relative number of persons pursuing the various occupations must be considered in any comparisons which are made. Thus there are more farmers, among males, and more housekeepers, among females, than there are persons engaged in any other classes of occupations. The number of suicidal deaths from these classes would, therefore, naturally be greater—whether to the extent shown in the table or not cannot be determined from any data at hand. This word of caution may seem unnecessary but, perhaps, is not entirely so as many persons would conclude from a hasty glance at this table that farmers were especially disposed to suicide—a conclusion which, whether true or not, is not warranted by any facts therein presented.

As regards nativity (Table 81B) the state of New York comes next to Michigan itself as the native state of suicidal decedents in Michigan for the last eighteen years. Germany exceeds even New York and far surpasses other foreign countries for the same time. Of the 79 suicides in 1891, 32 were natives of Michigan, 17 of New York, 10 of Germany, 4 of Ohio, 3 of Canada, 3 of Holland, 2 each, of Illinois and England, and the remainder were divided singly among the following: Denmark, New Hampshire, Scotland, Sweden, Wisconsin, and unknown nativity.

The means of death used is not stated in a very large proportion of cases—over one-half. Of those for which it is recorded the order of preference seems to be (1) poison, (2) hanging, (3) shooting, (4) drowning and (5) cutting throat. In 1891, out of 79 deaths, 55 did not specify the means used; 9 were cases of hanging, 8 of poison, 3 each of shooting and drowning, and 1 of cutting throat.

DEATHS FROM SUICIDE.

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TABLE 81.—Certain facts concerning persons returned as having died by suicide in Michigan during the years 1874-1891.

Years.	Months of death.												Sex.		Condition.							
	Number.	Jan.		Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Unk.	Totals.	Males.	Females.	Married.	Single.	Wid.	Unk.
		81	60	90	124	132	131	132	132	112	126	133	136	7	1,386	1,063	322	341	861	124	60	
Totals.....	1,386	81	60	90	124	132	131	132	132	112	126	133	136	7	1,386	1,063	322	341	861	124	60	
1874.....	53	7	3	4	1	4	5	5	4	3	5	6	6	—	53	31	22	28	17	4	4	
1875.....	52	3	4	3	4	8	4	4	4	5	3	6	4	—	52	42	10	34	10	3	5	
1876.....	54	3	1	3	7	7	8	2	4	5	6	5	3	—	54	43	11	38	12	3	4	
1877.....	66	2	5	7	4	7	5	6	7	4	2	7	10	—	66	46	20	38	23	2	3	
1878.....	63	5	2	5	5	5	9	5	7	5	6	5	4	—	63	40	23	41	16	4	2	
1879.....	59	3	2	4	7	8	8	5	7	5	4	4	7	—	59	46	13	35	19	3	2	
1880.....	65	4	3	6	8	6	6	3	4	7	2	6	6	1	65	50	15	38	20	4	3	
1881.....	57	1	5	3	3	4	4	4	7	9	7	4	6	4	57	42	15	34	11	9	3	
1882.....	62	2	3	4	6	8	7	2	7	5	7	4	6	1	62	44	18	32	24	3	3	
1883.....	91	5	1	7	9	5	8	11	9	4	6	16	10	—	91	69	22	58	28	12	3	
1884.....	104	4	5	7	8	6	16	8	8	14	10	10	8	—	104	84	20	71	28	4	1	
1885.....	91	4	4	3	7	7	9	9	11	4	14	10	8	1	91	78	12	55	19	13	4	
1886.....	62	7	2	4	6	13	5	4	11	9	7	7	9	—	62	64	18	46	20	11	5	
1887.....	105	3	4	10	12	11	5	10	12	10	13	6	9	—	105	75	30	68	28	10	4	
1888.....	101	6	4	8	10	13	11	9	7	9	11	8	8	2	101	82	19	54	31	12	4	
1889.....	94	7	3	8	7	7	8	7	11	4	8	11	17	1	94	78	16	58	19	14	2	
1890.....	108	7	8	7	11	11	7	17	7	7	8	9	9	—	108	90	18	70	25	7	6	
1891.....	79	8	1	7	9	4	6	5	3	5	10	9	8	1	79	49	30	55	16	6	2	

a 1 mulatto. b 1 sex unknown.

TABLE 81A.—Occupations of suicides, eighteen years, 1874-1891.

Occupations.	No.	Occupations.	No.	Occupations.	No.
Agents	11	Farmers	413	Peddlers	5
Architects	1	Farmers' wives	6	Physicians	7
Bakers	2	Gardeners	2	Photographers	1
Bankers	3	Grain dealers	1	Policemen	1
Barbers	3	Harness makers	2	Printers	4
Blacksmiths	7	Hatters	1	Prostitutes	9
Book agents	1	Hostlers	1	Sailors	5
Bookkeepers	13	Hotel keepers	6	Salesmen	5
Brewers	5	House keepers	112	Saloonkeepers	23
Brickmakers	3	House wives	37	Seamstresses	1
Brick masons	1	Housework	4	Servants	29
Business men	4	Insurance agents	3	Ship carpenters	1
Butchers	9	Laborers	194	Shoemakers	14
Cabinet makers	3	Lawyers	6	Soldiers	3
Carriage trimmers	1	Lumbermen	4	Stavemakers	1
Carpenters	32	Machinists	5	Stovemounters	1
Cigarmakers	5	Manicure	1	Students	5
Clerks	31	Masons	10	Tailors	8
Clerks in restaurant	1	Mechanics	14	Tanners	3
Conductors	1	Merchants	23	Teachers	5
Contractors	1	Millers	3	Teamsters	6
Coopers	7	Milliners	1	Tinners	2
Cutters	1	Miners	5	Unemployed	47
Dentists	1	Ministers	1	Unknown	145
Domestics	9	Mill owners	1	Upholsterers	1
Draymen	5	Miscellaneous	11	Waiters	1
Druggists	5	Musicians	4	Weavers	3
Engineers	5	Painters	3		
Total					1,368

DEATHS FROM SUICIDE.

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TABLE 81a.—*Nativity of suicides, eighteen years, 1874-91.*

Nativity.	No.	Nativity.	No.	Nativity.	No.
Austria.....	2	Italy.....	1	Poland.....	3
Bohemia.....	1	Kentucky.....	1	Prussia.....	11
Canada.....	88	Maine.....	3	Rhode Island.....	1
Colorado.....	1	Massachusetts.....	7	Russia.....	1
Connecticut.....	6	Michigan.....	232	Scotland.....	16
Delaware.....	1	Minnesota.....	1	Sweden.....	12
Denmark.....	3	New Hampshire.....	4	Switzerland.....	2
England.....	68	New Jersey.....	8	Texas.....	1
France.....	6	New York.....	237	United States.....	2
Germany.....	255	North Carolina.....	1	Unknown.....	102
Holland.....	20	Norway.....	1	Vermont.....	15
Illinois.....	5	Nova Scotia.....	2	Virginia.....	2
Indiana.....	11	Ohio.....	70	Wisconsin.....	10
Ireland.....	39	Pennsylvania.....	31	Zealand.....	2
Total.....					1,396

TABLE 81c.—*Means of death employed by suicides, eighteen years, 1874-91.*

Means used.	No.	Means used.	No.	Means used.	No.
Burning.....	1	Poison.....	194	Strangulation.....	2
Cutting throat.....	27	Run over by cars.....	2	Unknown.....	768
Drowning.....	71	Severing artery.....	8	Wounds.....	5
Dynamite.....	1	Shooting.....	121		
Hanging.....	187	Starving.....	1		
Total.....					1,396

Table 82 displays, in order of importance, the mortality from the fifteen principal causes of death in Michigan during the year 1891. The table is derived from Table 78, and consequently, the numbers given differ in some cases from those previously presented under Table 74.

Consumption is the leading cause of death, as it has been for every year of registration except 1881, when diphtheria held first place. It caused 9.3 per cent of the total mortality. This was less than the proportion of deaths in 1890, 10.2 per cent, and also less than that for 1889, 11.4 per cent. As already noted under a previous table consumption appears to have abruptly fallen in its death-rate during the present year coincidentally with the unusual rise in mortality from influenza. That this fall did not occur in the first year of the epidemic is a fact of interest.

As compared with the total number of deaths of each sex from all causes, a decidedly larger proportion of females died of consumption than males. A comparison of the number of each sex dying at each period of age and also statements of the ratios to population will be found in the exhibits under Table 87.

In the general order of the fifteen causes of death there are some changes as compared with the years immediately preceding. Still-births have dropped to the fourth place; they occupied the second place in 1889 and 1890. Pneumonia, third on the list in 1891, was fourth* in 1890 and third in 1889. Heart disease, which has risen to second place in 1891, occupied the fourth place in 1889 and sixth place in 1890. It includes, however, for this year 77 deaths from various specified cardiac affections as well as 1200 cases returned simply as "heart disease" and "heart failure." Diphtheria holds the same rank as in 1889—sixth place; it was third in 1890. Influenza* appears for the second year as a leading cause of death, ranking in the same order—fifth place. Other minor changes may be noted.

TABLE 82.—*Mortality in Michigan from fifteen principal causes of death, as returned for the year 1891.*

Order.	Specified causes and conditions, 1891.	Number of deaths.				Per cent from each cause to deaths from all causes.		
		Totals.	Males.	Females.	Unk.	Totals.	Males.	Females.
1	Consumption	2,060	980	1,079	1	9.3	8.2	10.5
2	Heart diseases	1,277	726	551	—	5.8	6.1	5.5
3	Pneumonia	1,185	703	481	1	5.4	5.9	4.8
4	Stillborn	1,090	583	494	73	4.9	4.9	4.3
5	Influenza	1,076	569	507	—	4.9	4.8	5.1
6	Diphtheria	1,060	543	516	1	4.8	4.6	5.2
7	Old age	1,014	521	493	—	4.6	4.4	4.9
8	Apoplexy and paralysis	809	450	359	—	3.6	3.5	3.6
9	Cholera infantum	799	431	364	4	3.6	3.6	3.6
10	Typhoid fever	694	430	254	—	3.1	3.6	2.5
11	Convulsions	547	313	234	—	2.5	2.6	2.3
12	Cancer	534	214	320	—	2.4	1.8	3.2
13	Scarlet fever	400	208	191	1	1.8	1.7	1.9
14	Dropsy	387	195	202	—	1.8	1.6	2.0
15	Inflammation of bowels	353	177	176	—	1.6	1.5	1.5
	Totals	13,285	7,043	6,161	81	60.2	59.1	61.6
	All causes	22,079	11,908	9,998	173	—	—	—

Tables 83 and 84 are to be studied together, being virtually a single exhibit. The number of deaths of each sex and for each month of the year and each period of age from ten important causes of death, are taken from Table 78 and arranged for comparison in Table 83. In order that such comparison may be more readily and cor-

* Pneumonia is seventh in the list as printed in the 1890 Report and influenza does not appear at all—probably an unintentional omission, as it was a very important cause of death in that year. See note in regard to pneumonia in 1890 under that head, Table 78.

rectly made the per cents of the total deaths are given in Table 84 for each sex, month and age-period.

As an example, we see that there were recorded 534 deaths from cancer (Table 83) in 1891. This was 2.4 per cent of the total mortality from all causes (Table 84). Of these 534 deaths, 214 were males (40.1 per cent), and 320 were females (59.9 per cent). The deaths were very evenly distributed through the months of the year (allowing for more accurate registration in latter months), but October and December range especially high (13.8 and 12.2 of total deaths respectively). The especial prevalence of cancer in the periods of life beyond middle age is well shown. Sixty per cent of the total deaths are those of persons aged from 45 to 70. The rise in children under five is probably due to confusion of "canker" and "cancer" in the returns.

Of the diseases considered, cancer and whooping-cough alone show a larger per cent of deaths of females. They show the same predominance as a rule in previous years.

In the distribution of deaths from the several causes through the year, we may note the increase of cephalitis (inflammation of the brain), diarrhea, dysentery, typhoid fever and whooping-cough in the late summer and autumn months; the greater prevalence of croup, diphtheria, scarlet fever and measles in the winter and spring. More extended observations in regard to certain of these diseases and the meteorological conditions associated with their prevalence, are given in the following tables.

Lastly, in age-distribution, the diseases compared present some important contrasts. Cancer, as has been remarked, draws the largest number of its deaths from persons beyond middle age; cephalitis, diarrhea (not including cholera infantum), measles and scarlet fever, show about two-thirds of their total mortality for children under five. Over 96 per cent of the deaths from whooping cough are of children under that age. Croup is slightly more fatal from five to ten than under five; diphtheria is also very high in the second period and shows a large proportion (12.4 per cent) of deaths for children aged ten to fifteen. Scarlet fever also ranges high for children of five to ten. Typhoid fever is most fatal in young adults, over one-fifth of the deaths being between the ages of twenty and twenty-five.

TABLE 83.—Deaths from ten specified causes returned for the year 1891, exhibiting the number of each sex, total number in each month and at different periods of age.

Sex, months and ages.		Causes of death, 1891.									
		Cancer.	Cephalitis.	Croup.*	Diarrhea.	Diphtheria.	Dysentery.	Measles.	Scarlet fever.	Typhoid fever.	Whooping-cough.
Sex	Totals.....	534	315	288	79	1,080	89	225	400	684	156
	Males.....	214	176	151	45	543	51	116	208	430	71
	Females.....	320	139	137	34	516	38	109	191	254	84
	Unknown.....					1			1		
Months	January.....	36	24	22	2	121	2	14	25	26	4
	February.....	35	20	18	2	74	3	20	24	29	8
	March.....	37	20	24	2	90	1	33	32	17	5
	April.....	36	22	27	7	64	5	38	18	24	12
	May.....	39	31	11	1	75	2	28	24	24	10
	June.....	38	19	20	2	61	4	27	23	25	10
	July.....	42	15	14	10	75	8	13	30	20	15
	August.....	40	43	27	19	66	22	10	41	68	19
	September.....	44	35	20	16	56	18	16	28	127	19
	October.....	74	37	28	13	88	20	6	36	138	17
	November.....	48	22	39	1	108	2	7	47	111	15
	December.....	65	27	37	4	157	2	21	72	76	5
	Unknown.....			1							
	Av. Mo.....	44	26	24	6	89	7	18	33	57	12
Ages	Under 5.....	12	214	250	57	459	47	150	249	46	12
	5 to 10.....	1	27	34	2	365	5	25	111	29	
	10 to 15.....	1	15	1	1	131		9	25	48	
	15 to 20.....	2	15	1		43	1	12	8	90	
	20 to 25.....	2	5		1	24		4	4	142	
	25 to 30.....	7	5		2	10		3	1	88	
	30 to 35.....	18	6			9	2	2	1	59	
	35 to 40.....	27	3		2	4		2		47	
	40 to 45.....	39	4		1	1	4	2		33	
	45 to 50.....	62	3		2	2	2	3		24	
	50 to 55.....	59	3			1		1		20	
	55 to 60.....	67	2			2	3	1		17	
	60 to 65.....	67	3		1		3			11	
	65 to 70.....	66	2		2	3	2	1		11	
	70 to 75.....	41	3		1		7			12	
	75 to 80.....	32	1		1		5			2	
	80 and over.....	20			4		8			3	
	Unknown.....	11	4	2	2	6			1	7	1

* Includes 35 cases of membranous croup.

PER CENT. OF DEATHS FROM TEN SPECIFIED CAUSES.

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TABLE 84.—Per cent of deaths returned for the year 1891, from each of ten specified causes to deaths from all causes, and per cent of each sex, of deaths in each month and at different periods of life, to total deaths from each specified cause.

Sex, months and ages.		Causes of death 1891, per cent of total.									
		Cancer.	Cephal-itis.	Croup.	Diarrhea.	Diphtheria.	Dysentery.	Measles.	Scarlet fever.	Typhoid fever.	Whooping cough.
Per cent of all causes		2.4	1.4	1.3	.4	4.8	.4	1.0	1.8	3.1	.7
Sex	Males	40.1	55.9	52.4	57.0	51.2	57.3	51.6	52.0	62.9	46.8
	Females	59.9	44.1	47.6	43.0	48.7	42.7	48.4	47.8	37.1	53.2
	Unknown					.1			.2		
Months	January	6.7	7.6	7.6	2.5	11.4	2.2	6.2	6.3	8.8	2.5
	February	6.6	6.3	6.3	2.5	7.0	3.4	8.9	6.0	4.2	5.1
	March	6.9	6.3	8.3	2.5	8.5	1.1	14.7	8.0	2.5	5.1
	April	6.7	7.0	9.4	8.9	6.0	5.6	16.9	4.5	3.5	7.6
	May	7.3	9.8	3.8	1.3	7.1	2.2	11.6	6.0	3.5	6.3
	June	7.1	6.0	6.9	2.5	5.8	4.5	12.0	5.8	3.8	6.3
	July	7.9	4.8	4.9	12.7	7.1	9.0	5.8	7.5	2.9	10.1
	August	7.5	13.7	9.4	24.1	6.2	24.7	4.4	10.2	9.9	12.0
	September	8.2	11.1	6.9	20.3	8.1	20.2	4.4	7.0	18.6	12.0
	October	13.8	11.7	9.7	16.5	8.3	22.5	2.7	9.0	30.1	10.8
	November	9.0	7.0	13.5	1.3	9.7	2.2	3.1	11.8	16.2	9.5
	December	12.2	8.6	12.8	5.1	14.8	2.2	9.3	18.0	11.1	12.7
	Unknown			.3							
	Av. Mo.	8.2	8.3	8.3	7.6	8.3	7.9	8.0	8.3	8.3	8.2
Ages	Under 5	2.2	67.9	8.7	72.2	43.3	52.8	66.7	62.3	6.7	96.2
	5 to 10	.2	8.6	11.8	2.5	34.4	5.6	15.6	27.8	4.2	1.3
	10 to 15	.2	4.8	.3	1.3	12.4		4.0	6.3	7.0	.6
	15 to 20	.4	4.8	.3		4.1	1.1	5.3	2.0	18.2	
	20 to 25	.4	1.6		1.3	2.3		1.8	1.0	20.7	.6
	25 to 30	1.3	1.6		2.5	.9		1.3	.3	12.1	
	30 to 35	3.4	1.9			.8	2.2	.8	.3	8.6	
	35 to 40	5.1	1.0		2.5	.4		.8		6.9	
	40 to 45	7.3	1.3		1.3	.1	4.5	.8		4.8	
	45 to 50	11.6	1.0		2.5	.2	2.2	1.3		8.5	
	50 to 55	11.0	1.0			.1		.4		2.9	
	55 to 60	12.5	.6			.2	3.4	.4		2.5	
	60 to 65	12.5	1.0		1.3		3.4			1.6	
	65 to 70	12.4	.6		2.5	.3	2.2	.4		1.6	
	70 to 75	7.7	1.0		1.3		7.9			1.8	
	75 to 80	6.0	.3		1.3		5.6			.3	
	80 and over	3.7			5.1		9.0			.4	
	Unknown	2.0	1.3	.7	2.5	.6			.3	1.0	1.3

CLIMATIC CONDITIONS AFFECTING CAUSES OF DEATH.

Under this heading are presented the usual tables making comparison between certain meteorological conditions that prevailed during the months of the year 1891 and the number of deaths registered for those months from consumption, pneumonia, influenza, diphtheria, croup, scarlet fever, typhoid fever and the diarrheal diseases (diarrhea, dysentery, cholera infantum, etc.).

As influenza occupied a very prominent position as a cause of death in 1890, as well as in the present year, tables are given for this disease for both years.

In these tables the months are arranged in groups, accordingly as the number of deaths returned for each disease is greater or less than the average number. It should be remembered that the returns of deaths are imperfect, and more so for the earlier months of the year than for the latter months. All the remarks relate only to the number of deaths returned and it is probable that a somewhat different showing would be made could the actual number of deaths that occurred in each month be known.

TABLE 85. TEMPERATURE. *Average by years and by months, for the years 1882-1891 inclusive, at representative stations in Michigan.*

Years.	No. of stations.*	Annual average.	Average temperature, stated in degrees Fahrenheit, by months.											
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1882	22	47.14	24.82	33.42	34.12	42.65	51.04	64.43	67.54	69.05	61.70	53.53	37.90	25.72
1883	19	43.52	15.78	20.03	24.63	43.00	51.37	64.73	68.36	65.41	57.24	46.78	38.10	26.99
1884	20	44.72	15.14	20.94	28.78	42.00	54.38	67.04	66.70	66.10	64.72	51.56	34.53	24.77
1885	21	42.36	15.46	19.21	19.51	41.39	53.32	63.39	71.13	63.23	59.14	45.78	38.14	27.59
1886	17	44.82	18.72	21.18	30.10	46.04	54.69	63.31	68.68	67.36	61.15	51.84	34.32	20.44
1887	17	44.32	16.58	21.57	25.55	42.09	60.68	66.53	78.22	66.41	57.96	44.46	35.18	27.57
1888	13	45.03	15.93	21.65	25.89	42.81	53.40	68.08	70.95	68.05	58.20	46.01	38.73	30.73
1889	13	47.36	28.18	18.57	35.88	46.04	56.74	63.05	70.69	68.58	61.36	44.59	37.95	26.76
1890	12	46.99	30.06	30.07	27.47	45.23	52.41	69.93	71.29	65.28	58.06	48.85	36.60	26.65
1891	11	47.61	26.90	27.33	28.93	47.11	55.40	67.62	66.67	68.16	65.50	49.01	34.57	34.11
Average for 10 years	16.5	45.44	20.71	22.50	28.08	43.84	54.34	65.81	69.55	66.76	60.50	48.24	36.80	26.12

* The stations represented in the lines for average temperature for the years 1882-1891 in Table 85 are the following: Thornville for 1882-1891; Kalamazoo for 1882-1890; Lansing for 1882-1891; Mendon for 1882; Tecumseh for 1882-1885, 1888, 1890; Battle Creek for 1882, 1885, 1888, 1890, 1891; Reed City for 1883-1885; Marquette for 1882-1884, 1886, 1887-1890; Alpena, Grand Haven, Port Huron, Detroit, for 1883-1887, 1890; Washington for 1882, 1883; Agricultural College for 1882-1888, 1890, 1891; Escanaba for 1882-1887; Harrisville for 1882, 1885, 1886, 1890, 1891; Ann Arbor for 1882-1891; Parkville for 1882; Traverse City for 1883-1891; Hillsdale for 1882-1884; Marshall 1882-1891; Winfield for 1883; Ionia for 1883-1885; Manistique, Swarts Creek for 1884 and 1885; Mackinaw City for 1884-1887; Port Austin for 1885, 1888 and 1890; Muskegon, Pentwater for 1886; Birmingham for 1887-1891; Otsego for 1887, 1888 and 1890; Gulliver Lake for 1887, 1888 and 1890; Rockland and Albion for 1891; Otisville for 1882.

TABLE 86.—PRESSURE OF THE ATMOSPHERE.—*Observations of barometer reduced to freezing point for each of the years 1882-1891 inclusive, and the average for ten years, at representative stations in Michigan.*

Years.	No. of stations.*	Annual average.	Pressure of the atmosphere, stated in inches of mercurial column, by months.											
			January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1882.....	21	29.138	29.186	29.121	29.149	29.158	29.123	29.001	29.118	29.112	29.202	29.184	29.224	29.185
1883.....	17	29.189	29.221	29.328	29.145	29.125	29.099	29.072	29.140	29.223	29.238	29.275	29.182	29.205
1884.....	18	29.205	29.274	29.204	29.202	29.147	29.181	29.273	29.100	29.216	29.210	29.268	29.218	29.229
1885.....	19	29.152	29.200	29.119	29.186	29.194	29.092	29.181	29.126	29.151	29.195	29.145	29.092	29.135
1886.....	15	29.192	29.188	29.198	29.126	29.230	29.128	29.161	29.159	29.166	29.222	29.331	29.187	29.226
1887.....	15	29.215	29.118	29.310	29.250	29.152	29.204	29.208	29.188	29.234	29.305	29.185	29.211	29.218
1888.....	12	29.158	29.278	29.129	29.208	29.250	29.065	29.069	29.166	29.144	29.174	29.070	29.202	29.143
1889.....	12	29.123	29.068	29.177	29.089	29.116	29.060	29.100	29.104	29.192	29.131	29.228	29.135	29.141
1890.....	12	29.125	29.187	29.108	29.132	29.195	29.020	29.089	29.115	29.168	29.220	29.028	29.112	29.129
1891.....	11	29.057	29.041	28.993	29.068	29.025	29.118	29.015	29.055	29.035	29.158	29.105	29.048	29.028
Average, } 10 years, } 1882-91.. }	16.2	29.156	29.176	29.169	29.155	29.159	29.104	29.116	29.127	29.165	29.206	29.177	29.156	29.159

* The stations represented in the lines for average atmospheric pressure for the years 1882-1891 in Table 86 are the following: Lansing for 1882-1891; Kalamazoo for 1882, 1885-1890; Battle Creek for 1884, 1888, 1891; Detroit, Alpena, Grand Haven and Port Huron for 1882-1887, 1890; Mendon, Hillsdale and Washington for 1882, 1883; Marquette for 1882-1884, 1885, 1887, 1890; Agricultural College and Ann Arbor for 1882-1891; Tecumseh and Reed City for 1882-1885; Thornville for 1884-1891; Escanaba for 1882-1887; Traverse City for 1882-1891; Harrisville for 1882, 1885-1888, 1890, 1891; Hastings and Otisville for 1882; Port Austin for 1883, 1884, 1888; Marshall for 1884-1891; Manistique and Ionia for 1884, 1885; Mackinaw City for 1884-1887; Swartz Creek for 1885; Birmingham for 1887-88, 1890-91; Gulliver Lake for 1888-90; Rockland and Albion for 1891.

TABLE 87.—Deaths returned from consumption in Michigan, by months, during the year 1891, and some coincident meteorological conditions at representative stations in Michigan during the same year and months.

Months in order by number of deaths from consumption, greatest first.	Deaths from consumption, 1891.		Temperature, degrees, Fahr.		Humidity of atmosphere, etc., monthly averages.				Ozone,—rel- ative; maxi- mum = 10.		Average velocity of wind,—miles per hour by reg- istering anemometer. [§]	Average pressure of atmosphere, (Barometer re- duced to 32° Fahr.)||	
	Number.*	Per cent of total.	Average daily range by registering thermometer. [†]	Average of three daily observations. [‡]	Relative per cent of saturation.	Absolute grains of vapor in a cubic foot of air. ^{**}	Weight in troy ounces of vapor in- haled by one person in 24 hours. ^{††}	Weight in troy ounces of vapor ex- haled from air passages in 24 hours in excess of vapor inhaled. ^{‡‡}	Day—7 a. m. to 2 p. m.	Night—9 p. m. to 7 a. m.			
Number of stations in- cluded in meteor- ological averages.	2,052	100.0	16	11	8	8	8	8	8	8	8	11	
More than average num- ber of deaths.	May	198	9.6	23.16	b 55.40	a 66	b 3.67	2.29	9.39	b 4.40	b 4.41	a 9.7	29.118
	December	194	9.5	a 14.04	34.11	80	2.14	1.34	10.34	3.59	4.19	13.4	a 29.028
	March	193	9.4	a 14.90	28.93	83	1.79	1.12	10.56	b 4.46	b 4.91	11.2	29.063
	August	188	9.2	19.93	b 68.16	a 73	b 5.88	3.64	8.04	3.92	3.92	a 7.2	a 29.035
	October	188	9.2	18.18	b 49.01	a 75	3.37	2.11	9.57	3.85	3.92	10.1	29.105
	November	174	8.5	a 13.65	34.57	84	2.32	1.45	10.23	3.45	3.51	11.7	a 29.048
	September	171	8.3	21.70	b 65.50	a 75	b 5.42	3.39	8.29	3.82	3.61	a 8.5	29.158
	Average	171	8.3	18.01	47.61	77	3.54	2.21	9.47	3.99	4.23	9.9	29.057
	Less than av'rage number of deaths.												
April	170	8.3	a 19.37	b 47.11	74	b 3.19	1.99	9.69	4.02	4.83	9.9	29.025	
July	157	7.6	a 21.33	66.67	70	5.30	3.31	8.37	b 3.94	b 4.15	8.5	29.055	
June	148	7.2	a 21.02	67.62	73	5.86	3.66	8.02	4.10	4.37	7.4	29.015	
February	138	6.7	15.76	b 27.33	a 84	b 1.84	1.15	10.53	4.18	4.86	a 12.1	28.969	
January	133	6.5	12.90	b 26.90	a 87	b 1.77	1.11	10.57	4.20	b 4.03	8.6	29.041	

* Excluding 7 deaths in unknown month. The numbers for the months are those given in the alphabetical list (Table 78), and do not include 32 deaths from "hemorrhage of the lungs" and 5 deaths from "cough" classed with consumption in Table 74.

† Average of observations made at 16 stations, as follows: Rockland, Marquette, Manistee, Traverse City, Alpena, Harrisville, Grand Haven, Port Huron, Thornville, Agricultural College, Lansing, Albion, Ann Arbor, Marshall, Birmingham, Detroit.

‡ Average of observations made at 11 stations, as follows: Rockland, Traverse City, Harrisville, Thornville, Agricultural College, Lansing, Albion, Ann Arbor, Battle Creek, Marshall, Birmingham.

§ Average of observations made at 8 stations, as follows: Traverse City, Thornville, Agricultural College, Lansing, Albion, Ann Arbor, Marshall, Birmingham.

|| Average of observations made at 8 stations, as follows: Rockland, Traverse City, Harrisville, Thornville, Lansing, Albion, Ann Arbor, Marshall.

** (Calculated from readings of dry bulb and wet bulb thermometers.

†† Calculated for 18 respirations per minute of 20 cubic inches of air each.

‡‡ Assuming the air exhaled to be saturated with vapor at the temperature of 95° F., each cubic foot containing 18.69 grains, 18 respirations per minute, of 20 cubic inches of air each, making 11.68 Troy ounces of vapor exhaled daily. No correction made for expansion of air after being inhaled.

a An exception to the proposition that more than the average number of deaths from consumption occurred in months when the meteorological condition named at the head of the column was greater than the average for the year, and less in months when the same condition was less than the average.

b An exception to the proposition that more than the average number of deaths from consumption occurred in months when the meteorological condition named at the head of the column was less than the average for the year and less in months when the same condition was greater than the average for the year.

Consumption.—The number of deaths returned from consumption in Michigan during the year 1891 was 2,060 according to Table 78. In Table 74 and those based upon it a few additional deaths from hemorrhage of the lungs (32) and "cough" (4) are also included making the total number then given 2,096.

This number is less than that reported for any year since 1886. It is less by 150 than the number of deaths from this cause in 1890 (2,246) and is also less than the average for the five years preceding, 1886-90, which was 2,224.

The death rate from consumption for the year 1891, based upon estimated population, was 97.9 deaths per 100,000 inhabitants. This is decidedly lower than the rates given for any of the preceding five-year periods in Table 76, which ranged from 108.4 to 113.3. It would seem that many deaths were reported from influenza in 1891 that would ordinarily have been recorded as due to consumption. Influenza hastened their occurrence, but was not the primary cause. The distribution of deaths in each quarter of the year is shown in the following tabular statement:

Mortality from consumption, by months and quarters, 1891.

Months.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Unk
	133	138	193	170	198	148	157	188	171	189	174	194	7
Quarters.....	464			516			516			537			7
Per cent.....	22.5			25.0			25.0			27.0			.4

The second and third quarters all seem to show exactly the same number of deaths for this year. The last quarter shows the largest number of deaths and the first quarter the smallest number. This is dependent in part on more accurate registration of deaths in the final quarter of the year, which is nearer to the date of enumeration in May.

In the following statement of the aggregate number of deaths from consumption in each month and quarter of the twenty-three years, 1869-91, very nearly the same relations are seen to obtain, except that the second quarter of the year slightly exceeds the fourth, the total number of deaths for this time was 41,091 of which 19,094 (46.5 per cent) were males and 21,997 (53.5 per cent) were females.

Aggregate mortality from consumption by sex, months and periods of age, twenty-five years, 1869-91.

	Sex.			Months.												
	Males.	Females.	Totals.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
Males....	19,094	.....	.....	1,185	1,830	1,766	1,805	1,770	1,491	1,511	1,622	1,636	1,566	1,553	1,797	62
Females....	.....	21,997	.....	1,375	1,516	1,897	2,005	2,009	1,743	1,765	1,912	2,003	1,865	1,812	2,014	81
Totals....	.....	.....	41,091	2,560	2,846	3,663	3,810	3,779	3,234	3,276	3,534	3,639	3,431	3,365	3,811	143
Quarters.....	.....	.....	.....	9,069			10,823			10,449			10,607			143
Per cent.	46.5	53.5	100.0	22.1			26.3			25.4			25.8			.4

For the same period of time over one-quarter of the total number of deaths was those of persons between 20 and 30 years of age.

Aggregate mortality from consumption by sex and periods of age, for twenty-three years, 1869-91.

Sex.	Total.	Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 and over.	Unknown.
Males.....	19,094	1,346	221	270	1,169	4,466	3,218	2,526	2,155	2,023	1,192	209	290
Females.....	21,907	1,270	258	653	2,600	6,413	3,946	2,370	1,094	1,432	873	172	316
Totals.....	41,091	2,616	479	923	3,769	10,879	7,164	4,896	3,249	3,455	2,065	381	605
Per cent.....	100.0	6.4	1.2	2.2	9.2	26.5	17.4	11.9	9.4	8.4	5.0	.9	1.5

In the following exhibit the mortality from consumption in 1891 is compared to the total mortality at each period of age. The highest ratio of consumption to deaths from all causes is for the period between 25 and 30 years of age, when nearly one-third of all deaths are from phthisis. The periods 15-20 and 20-25 approach closely to the preceding with 28.1 per cent and 30.6 per cent respectively. However, when we came to compare the rates per 10,000 of deaths to the number of inhabitants living at the various periods of age, a more uniform arrangement appears. The mortality is greater for persons aged over 65, and also greater from 20 to 30 than for other periods.

EXHIBIT.—Deaths from consumption in Michigan during the year 1891, compared to total deaths, and to population in 1890, by periods of age; also mortality of the sexes at each period of age.

Ages in periods of years.	Deaths from all causes, 1891.	Deaths from consumption 1891.	Per cent of deaths from consumption to total deaths at each age.	Mortality of the sexes from consumption.*			Deaths from consumption in 1891 per 10,000 population in 1890.
				Males.	F-males.	Excess of females.	
All ages.....	22,079	2,060	9.3	980	1,079	98	9.3
Under 5.....	7,655	114	1.5	65	49	—16	4.3
5 to 10	985	18	1.8	6	12	6	.8
10 to 15	556	37	6.8	11	26	15	1.7
15 to 20	740	207	28.1	71	136	65	10.1
20 to 25	1,023	312	30.6	128	183	54	15.4
25 to 30.....	849	270	31.8	131	139	8	15.1
30 to 35.....	779	199	25.3	89	110	21	12.1
35 to 45.....	1,442	307	21.2	155	152	—3	12.3
45 to 55.....	1,489	232	15.6	125	107	—18	12.6
55 to 65.....	1,740	147	8.5	77	70	—7	12.6
All over 65.....	4,355	194	4.5	114	80	—34	21.2
Unknown	456	23	5.0	8	15	7	32.0

* The minus sign indicates an excess of males. One death of unknown sex aged 20 to 25 is included in the total.

DEATHS FROM PNEUMONIA.

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TABLE 88.—Deaths returned from pneumonia in Michigan, by months, during the year 1891, and some coincident meteorological conditions at representative stations in Michigan during the same year and months.

Months in order by number of deaths from pneumonia, greatest first.	Deaths from pneumonia, 1891.		Temperature, degrees Fahr.		Humidity of atmosphere, etc., monthly averages.				Ozone, — relative; maximum = 10.		Average velocity of wind,—miles per hour,—by registering anemometers.	Average pressure of atmosphere, (Barometer reduced to 32° Fahr.)
	Number,*	Per cent of total.	Average daily range by registering thermometer.	Average of three daily observations.	Relative—Per cent of saturation.	Absolute—Grains of vapor in a cubic foot of air.	Weight in troy ounces of vapor in- haled by one person in 24 hours.	Weight in troy ounces of vapor ex- haled from air passages in 24 hours in excess of vapor inhaled.	Day—7 a. m. to 2 p. m.	Night—9 p. m. to 7 a. m.		
Number of stations in- cluded in meteorolog- ical averages†.....	1,182	100.0	16	11	8	8	8	8	8	8	8	11
More than average No. of deaths.												
December.....	200	16.9	14.04	34.11	80	2.14	1.34	10.34	a 3.59	a 4.19	13.4	29.028
April.....	186	15.7	b 19.57	47.11	a 74	3.19	1.99	9.89	4.02	4.88	9.9	29.025
March.....	128	10.4	14.90	28.93	88	1.79	1.12	10.56	4.46	4.91	11.2	b 29.063
January.....	115	9.7	12.90	26.90	87	1.77	1.11	10.57	4.20	a 4.03	a 8.6	29.041
May.....	111	9.4	b 23.16	b 55.40	a 66	b 3.67	2.29	9.39	4.40	4.41	a 9.7	b 29.118
November.....	108	8.7	13.65	34.57	84	2.32	1.45	10.23	a 3.45	a 3.51	11.7	29.048
February.....	102	8.6	15.76	27.33	84	1.84	1.15	10.53	4.18	4.86	12.1	28.993
Average.....	98	8.3	18.01	47.61	77	3.54	2.21	9.47	3.99	4.23	9.9	29.057
Less than average No. of deaths.												
June.....	59	5.0	21.02	67.62	73	5.86	3.66	8.02	a 4.10	a 4.37	7.4	b 29.015
October.....	59	5.0	18.18	49.01	75	b 3.37	2.11	9.57	3.85	3.92	a 10.1	29.105
August.....	53	4.5	19.93	68.16	73	5.83	3.64	8.04	3.92	3.92	7.2	b 29.035
September.....	40	3.4	21.70	65.50	75	5.42	3.39	8.29	3.82	3.61	8.5	29.158
July.....	31	2.6	21.33	66.67	70	5.30	3.31	8.37	3.94	4.15	8.5	b 29.055

* Excludes three deaths in unknown months. It does not include two deaths from pleuro-pneumonia and 56 deaths from typhoid pneumonia.

† For notes in regard to meteorological data see Table 87, p. 306, preceding.

a An exception to the proposition that more than the average number of deaths from pneumonia occurred in months when the meteorological condition named at the head of the column was greater than the average for the year, and less in months when the same condition was less than the average.

b An exception to the proposition that more than the average number of deaths from pneumonia occurred in months when the meteorological condition named at the head of the column was less than the average for the year and less in months when the same condition was greater than the average for the year.

For the purpose of comparing the distribution of the deaths from pneumonia, as given in Table 88 for the year 1891, with the number returned for each month of preceding years, the following table is given, which extends from 1882 to 1891 inclusive. Beginning with the year 1888 a rise of over 300 above the largest number returned for any of the six years, 1882-87, will be noticed in the annual number of deaths returned. For the three years following, 1889, 1890 and 1891, nearly as many deaths were annually returned from this cause. The mortality rate, however, slightly decreased if allowance be made for an increase of population during each year.

The number of deaths returned from pneumonia in 1890 and 1891 does not appear to be largely increased by the presence of influenza in those years but the distribution of these deaths through the months of the year is quite different from that of 1888 and resembles the order of occurrence of influenza as given in the exhibits under the following tables. The months of maxima for pneumonia were January, April and December in 1890, April and December in 1891; for influenza, February in 1890 and January, April and December in 1891.

EXHIBIT.—Deaths returned from pneumonia, in Michigan, by months, for the years 1882-91.

Years.	Totals.	Deaths from pneumonia, 1882-1891.												
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
1882.....	735	59	65	81	82	94	58	29	29	36	43	57	97	2
1883.....	737	76	61	97	104	89	40	30	42	27	41	53	76	1
1884.....	767	68	101	106	83	67	39	34	42	34	30	70	90	3
1885.....	733	65	100	122	86	66	34	26	26	41	45	43	78	1
1886.....	783	57	62	113	100	63	48	32	28	36	46	76	121	1
1887.....	884	87	112	122	113	75	44	28	36	52	64	66	84	1
1888.....	1,190	96	133	181	143	128	74	36	37	68	68	74	121	1
1889.....	1,048	122	103	139	147	75	52	50	47	48	80	75	108	2
1890*.....	1,182	182	113	132	136	89	50	56	48	51	66	111	144	4
1891.....	1,185	115	102	123	186	111	59	31	53	40	59	103	200	3
Average for 10 years, 1882-91.	924	93	97	122	118	86	50	35	39	43	54	73	113	2

* From recount of returns of 1890. See note under pneumonia, Table 78, p. 292.

DEATHS FROM INFLUENZA.

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TABLE 89.—Deaths returned from influenza in Michigan, by months, during the year 1891, and some coincident meteorological conditions at representative stations in Michigan during the same year and months.

Months in order by number of deaths from influenza, greatest first.		Deaths from influenza, 1891.		Temperature, degrees, Fahr.		Humidity of atmosphere, etc., monthly averages.				Ozone, — rel- ative; maxi- mum = 10.		Average velocity of wind, — miles per hour by reg- istering anemometer.	Average pressure of atmosphere, (Barometer re- duced to 32° Fahr.)
		Number.*	Per cent of total.	Average daily range by registering thermometer.	Average of three daily observations.	Relative per cent of saturation.	Absolute grains of vapor in a cubic foot of air.	Weight in troy ounces of vapor in- haled by one person in 24 hours.	Weight in troy ounces of vapor ex- haled from air passages in 24 hours in excess of vapor inhaled.	Day—7 a. m. to 2 p. m.	Night—9 p. m. to 7 a. m.		
Number of stations in- cluded in meteorolo- gical averages†.....		1,072	100.0	16	11	8	8	8	8	8	8	8	11
More than the av- erage number of deaths.	April	249	23.2	b 19.57	47.11	a 74	3.19	1.99	9.69	4.02	4.83	9.9	a29.025
	December	160	14.9	14.04	34.11	80	2.14	1.34	10.34	a 3.59	a 4.19	13.4	a29.028
	January	110	10.3	12.90	26.90	87	1.77	1.11	10.57	4.20	a 4.03	a 8.6	a29.041
	May	110	10.3	b 23.16	b 55.40	a 66	b 3.67	2.29	9.39	4.40	4.41	9.7	29.118
	March	96	9.0	14.90	28.93	83	1.79	1.12	10.56	4.46	4.91	11.2	29.063
Average		89	8.3	18.01	47.61	77	3.54	2.21	9.47	3.99	4.23	9.9	29.057
Less than the average num- ber of deaths.	February	83	7.7	b 15.76	b 27.33	a 84	b 1.84	1.15	10.53	a 4.18	a 4.86	a 12.1	28.993
	June	62	5.8	21.02	67.62	73	5.86	3.66	8.02	a 4.10	a 4.37	7.4	29.015
	July	48	4.5	21.33	66.67	70	5.30	3.31	8.37	3.94	4.15	8.5	29.055
	September	48	4.5	21.70	65.50	75	5.42	3.39	8.29	3.82	3.61	8.5	a29.158
	November	38	3.5	b 13.65	b 34.57	a 84	b 2.32	1.45	10.23	3.45	3.51	a 11.7	29.048
	October	37	3.5	18.18	49.01	75	b 3.37	2.11	9.57	3.85	3.92	10.1	a29.105
	August	31	2.9	19.93	68.16	73	5.83	3.64	8.04	3.92	3.92	7.2	29.035

* Excluding 4 deaths in unknown month.

† See notes on meteorological data under Table 87, page 306.

a An exception to the proposition that more than the average number of deaths from influenza occurred in months when the meteorological condition named at the head of the column was greater than the average for the year, and less in months when the same condition was less than the average.

b An exception to the proposition that more than the average number of deaths from influenza occurred in months when the meteorological condition named at the head of the column was less than the average for the year and less in months when the same condition was greater than the average for the year.

TABLE 89 A.—Deaths returned from influenza in Michigan, by months, during the year 1890, and some coincident meteorological conditions, at representative stations in Michigan during the same year and months.

Months in order by number of deaths from influenza, greatest first.	Deaths from influenza, 1890.		Temperature, degrees, Fahr.		Humidity of atmosphere, etc., monthly average.				Ozone,— relative; maximum = 10.		Average velocity of wind,—miles per hour by registering anemometer.		Average pressure of atmosphere, (barometer reduced to 42° Fahr.)
	Number.*	Per cent of total.	Average daily range by registering thermometer.	Average of three daily observations.	Relative per cent of saturation.	Absolute grains of vapor in a cubic foot of air.	Weight in troy ounces of vapor in- haled by one person in 24 hours.	Weight in troy ounces of vapor ex- haled from air passages in 24 hours in excess of vapor inhaled.	Day—7 a. m. to 2 p. m.	Night—9 p. m. to 7 a. m.			
Number of stations in- cluded in meteorolo- gical averages†.....	1,082	100.0	19	12	10	10	10	10	5	8	7	12	
More than the average No. of deaths.	February	210	19.3	13.99	30.07	86	1.95	1.22	10.46	3.97	4.57	11.07	a 29.108
	January	174	16.1	15.22	30.06	87	2.02	1.26	10.42	3.99	3.91	12.01	29.157
	March	154	14.2	15.92	27.47	82	1.73	1.08	10.60	4.19	4.49	11.02	29.132
	April	133	12.3	b 20.63	45.23	a 73	2.93	1.83	10.85	4.08	4.47	10.03	29.195
Average	90	8.3	17.38	46.99	79	3.52	2.20	9.56	3.69	3.83	9.07	29.125	
Less than the average No. of deaths.	May	79	7.3	18.00	52.41	74	3.72	2.32	9.36	a 4.45	a 4.83	a 9.09	29.020
	June	60	5.5	19.96	69.93	74	6.23	3.89	7.79	a 4.13	a 4.19	7.04	29.089
	December	56	5.2	b 14.33	b 26.65	a 83	b 1.60	1.00	10.63	3.49	3.71	a 10.08	a 29.129
	August	53	4.9	20.06	65.28	76	5.46	3.41	8.27	3.49	a 4.19	7.09	a 29.165
	October	46	4.3	b 14.67	48.88	a 83	3.66	2.28	9.40	3.09	3.09	8.06	29.025
	July	44	4.1	21.37	71.29	69	5.95	3.72	7.96	3.23	3.39	8.03	29.115
	November	37	3.4	b 14.72	b 33.60	a 80	b 2.46	1.53	10.15	2.53	2.63	a 10.08	a 29.112
	September	36	3.3	19.67	58.06	a 80	4.59	2.87	8.31	3.44	3.14	8.04	29.220

* Excluding two in unknown month.

† See reference to number of stations in notes to Tables 85 and 86.

a An exception to the proposition that more than the average number of deaths from influenza occurred in months when the meteorological condition named at the head of the column was greater than the average for the year, and less in months when the same condition was less than the average.

b An exception to the proposition that more than the average number of deaths from influenza occurred in months when the meteorological condition named at the head of the column was less than the average for the year and less in months when the same condition was greater than the average for the year.

MORTALITY FROM INFLUENZA.

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An epidemic of influenza prevailed in Michigan, in common with other parts of the country, during the winter and spring months of the years 1889-90, 1890-91, 1891-92. Over a thousand deaths were ascribed to this cause for each of the years 1890 and 1891. A large mortality will also be recorded for 1892, but, so far as can be judged from a preliminary examination of the returns made to this date (Sept. 1, 1893), it will not be over one-third of that for the previous years.

The deaths returned from influenza, or, as generally stated in the returns, "la grippe," for each month of the years 1889, 1890 and 1891 are stated below. The term "la grippe" did not come into popular use until the winter and spring of 1890. It is interesting to note the influence that the time of collection (April, May, 1890. exercises on the returns for 1889 in the fact that no less than 147 deaths were so returned, many of them in the earlier months of the year. Only two deaths from influenza occurred in 1888, one in December and one in September. The abrupt transition from the number recorded for December, 1888, to the numbers given for the early months of 1889, seems to indicate clearly that the popular interest in "la grippe" at the time of enumeration was reflected over the returns for the previous year.

Deaths in Michigan from influenza ("la grippe"), by months, according to the returns for the years 1889, 1890, 1891.

Year.	Total for year.	Months.												
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.
1889.....	176	30	28	17	11	6	7	2	2	4	8	19	41	1
1890.....	1,084	174	210	154	133	79	60	44	53	36	46	37	56	2
1891.....	1,076	110	83	96	249	110	62	48	31	48	87	38	160	4

TABLE 90.—Deaths returned from diphtheria in Michigan, by months, during the year 1891, and some coincident meteorological conditions, at representative stations in Michigan during the same year and months.

Months in order by number of deaths from diphtheria, greatest first.	Deaths from diphtheria, 1891.		Temperature, degrees, Fahr.		Humidity of atmosphere, etc., monthly averages.				Ozone,— relative; maximum = 10.		Average velocity of wind,—miles per hour, by registering anemometer.	Average pressure of atmosphere, (barometer reduced to 32° Fahr.)	
	Number.	Per cent of total.	Average daily range by registering thermometer.	Average of three daily observations.	Relative per cent of saturation.	Also into grains of vapor in a cubic foot of air.	Weight in troy ounces of vapor in- haled by one person in 24 hours.	Weight in troy ounces of vapor ex- haled from air passages in 24 hours in excess of vapor inhaled.	Day—7 a. m. to 2 p. m.	Night—9 p. m. to 7 a. m.			
Number of stations in- cluded in meteorolo- gical averages*.....	1,060	100.0	16	11	8	8	8	8	8	8	8	11	
More than the av. No. of deaths.	December	157	14.8	14.04	84.11	80	2.14	1.34	10.34	3.59	4.19	13.4	a 29.028
	January	121	11.4	12.90	26.90	87	1.77	1.11	10.57	b 4.20	4.03	a 8.6	a 29.041
	November	103	9.7	13.65	34.57	84	2.32	1.45	10.23	3.45	3.51	11.7	a 29.048
	March	90	8.5	14.90	28.93	83	1.79	1.12	10.56	b 4.46	b 4.91	11.2	29.063
	October	88	8.3	b 18.18	b 49.01	a 75	3.37	2.11	9.57	3.85	3.92	10.1	29.105
Average	88	8.3	18.01	47.61	77	3.54	2.21	9.47	3.99	4.23	9.9	29.037	
Less than the average No. of deaths.	September	86	8.1	21.70	65.50	75	5.42	3.39	8.29	b 3.82	b 3.61	8.5	a 29.158
	May	75	7.1	23.16	55.40	66	3.67	2.29	9.39	4.40	4.41	9.7	a 29.118
	July	75	7.1	21.33	66.67	70	5.30	3.31	8.37	b 3.94	b 4.15	8.5	29.055
	February	74	7.0	b 15.76	b 27.33	a 84	b 1.84	1.15	10.53	4.18	4.86	a 12.1	28.998
	August	66	6.2	19.93	68.16	73	5.83	3.64	8.04	b 3.92	b 3.92	7.2	29.035
	April	64	6.0	19.57	b 47.11	74	b 3.19	1.99	9.69	4.02	4.83	9.9	29.025
June	61	5.8	21.02	67.62	73	5.86	3.66	8.02	4.10	4.37	7.4	29.015	

* See notes in regard to meteorological data under Table 87, p. 306.

a An exception to the proposition that more than the average number of deaths from diphtheria occurred in months when the meteorological condition named at the head of the column was greater than the average for the year, and less in months when the same condition was less than the average.

b An exception to the proposition that more than the average number of deaths from diphtheria occurred in months when the meteorological condition named at the head of the column was less than the average for the year and less in months when the same condition was greater than the average for the year.

TABLE 91.—Deaths returned from croup in Michigan, by months, during the year 1891, and certain meteorological conditions at representative stations in Michigan, during the same year and months.

Months in order by number of deaths from croup, greatest first.	Deaths from croup, 1891.		Temperature, degrees, Fahr.		Humidity of atmosphere, etc., monthly averages.				Ozone,— relative; maximum = 10.		Average velocity of wind,—miles per hour, by registering anemometer.		Average pressure of atmosphere, (Barometer reduced to 32° Fahr.)	
	Number.*	Per cent of total.	Average daily range by registering thermometer.	Average of three daily observations.	Relative per cent of saturation.	Absolute grains of vapor in a cubic foot of air.	Weight in troy ounces of vapor in- haled by one person in 24 hours.	Weight in troy ounces of vapor ex- haled from air passages in 24 hours in excess of vapor inhaled.	Day—7 a. m. to 2 p. m.	Night—9 p. m. to 7 a. m.				
Number of stations in- cluded in meteorological averages†....	287	100.0	16	11	8	8	8	8	8	8	8	8	11	
More than the average number of deaths.	November	39	13.6	13.65	34.57	84	2.32	1.45	10.23	3.45	3.51	11.7	29.048	
	December	37	12.9	14.04	34.11	80	2.14	1.34	10.34	3.59	4.19	13.4	29.028	
	October	28	9.8	b 18.18	b 49.01	a 75	3.37	2.11	9.57	3.55	3.92	10.1	b29.105	
	April	27	9.4	b 19.57	47.11	a 74	3.19	1.99	9.69	b 4.02	b 4.83	9.9	29.025	
	August	27	9.4	b 19.93	b 68.16	a 73	b 5.83	3.64	8.04	3.92	3.92	a 7.2	29.035	
	March	24	8.4	14.90	28.93	83	1.79	1.12	10.56	b 4.46	b 4.91	11.2	b29.063	
Average	24	8.4	18.01	47.61	77	3.54	2.21	9.47	3.99	4.23	9.9	29.057		
Less than the average number of deaths.	January	22	7.7	b 12.90	b 26.90	a 87	b 1.77	1.11	10.57	4.20	b 4.03	8.6	b29.041	
	June	20	7.0	21.02	67.62	73	5.86	3.66	8.02	4.10	4.37	7.4	b29.015	
	September	20	7.0	21.70	65.50	75	5.42	3.39	8.29	b 3.82	b 3.61	8.5	29.158	
	February	18	6.3	b 15.76	b 27.33	a 84	b 1.84	1.15	10.59	4.18	4.86	a 12.1	b28.993	
	July	14	4.9	21.33	66.67	70	5.30	3.31	8.37	b 3.94	b 4.15	8.5	b29.055	
	May	11	3.8	23.16	55.40	66	3.67	2.29	9.39	4.40	4.41	9.7	29.118	

* Includes 35 deaths from membranous croup and excludes 1 death in unknown month.

† For notes in regard to meteorological data see Table 87, p. 306.

a An exception to the proposition that more than the average number of deaths from croup occurred in months when the meteorological condition named at the head of the column was greater than the average for the year, and less in months when the same condition was less than the average.

b An exception to the proposition that more than the average number of deaths from croup occurred in months when the meteorological condition named at the head of the column was less than the average for the year, and less in months when the same condition was greater than the average for the year.

TABLE 92.—Deaths returned from scarlet fever in Michigan, by months, during the year 1891, and some coincident meteorological conditions, at representative stations in Michigan during the same year and months.

Months in order by number of deaths from scarlet fever, greatest first.		Deaths from scarlet fever, 1891.		Temperature, degrees, Fahr.		Humidity of atmosphere, etc., monthly averages.				Ozone,—rel- ative; maxi- mum=10.		Average velocity of wind,—miles per hour by reg- istering anemometer.	Average pressure of atmosphere. (Barometer re- duced to 32° Fahr.)
		Number.	Per cent of total.	Average daily range by registering thermometer.	Average of three daily observations.	Relative per cent of saturation.	Absolute grains of vapor in a cubic f of air.	Weight in troy ounces of vapor inhaled by one person in 24 hours.	Weight in troy ounces of vapor exhaled from air passages in 24 hours in ex- cess of vapor inhaled.	Day—7 a. m. to 2 p. m.	Night—9 p. m. to 7 a. m.		
Number of stations in- cluded in meteorolo- gical averages*.....		400	100.0	18	11	8	8	8	8	8	8	8	11
More than av. No. of deaths.	December.....	72	18.0	14.04	34.11	80	2.14	1.34	10.34	3.59	4.19	13.4 a	29.025
	November.....	47	11.8	13.65	34.57	84	2.32	1.45	10.23	3.45	3.51	11.7 a	29.045
	August.....	41	10.2	b 19.93	b 68.16	a 73	b5.83	3.64	8.04	3.92	3.92	a 7.2 a	29.035
	October.....	36	9.0	b 18.18	b 49.01	a 75	3.37	2.11	9.57	3.85	3.92	10.1	29.105
	Average.....	38	8.3	18.01	47.61	77	3.54	2.21	9.47	3.99	4.23	9.9	29.057
Less than the average number of deaths.	March.....	32	8.0	b 14.90	b 28.93	a 83	b1.79	1.12	10.56	4.46	4.91	a11.2 a	29.068
	July.....	30	7.5	21.33	66.67	70	5.80	3.31	8.37	b3.94	b4.15	8.5	29.055
	September.....	28	7.0	21.70	65.50	75	5.42	3.39	8.29	b3.82	b3.61	8.5 a	29.153
	January.....	25	6.3	b 12.90	b 26.90	a 87	b1.77	1.11	10.57	4.20	b4.03	8.6	29.041
	February.....	24	6.0	b 15.76	b 27.33	a 84	b1.84	1.15	10.53	4.18	4.86	a12.1	28.993
	May.....	24	6.0	23.16	55.40	66	3.67	2.29	9.39	4.40	4.41	9.7	a29.113
	June.....	23	5.7	21.02	67.62	73	5.86	3.66	8.02	4.10	4.37	7.4	29.015
	April.....	18	4.5	19.57	b 47.11	74	b3.19	1.90	9.69	4.02	4.83	9.9	29.025

* See notes in regard to meteorological data under Table 87, p. 306.

a An exception to the proposition that more than the average number of deaths from scarlet fever occurred in months when the meteorological condition named at the head of the column was greater than the average for the year, and less in months when the same condition was less than the average.

b An exception to the proposition that more than the average number of deaths from scarlet fever occurred in months when the meteorological condition named at the head of the column was less than the average for the year and less in months when the same condition was greater than the average for the year.

TABLE 93.—Deaths returned from typhoid fever in Michigan, by months, during the year 1891, and some coincident meteorological conditions, at representative stations in Michigan during the same year and months.

Months in order by number of deaths from typhoid fever, greatest first.	Deaths from typhoid fever, 1891.		Temperature, degrees, Fahr.		Humidity of atmosphere etc., monthly averages.				Ozone,— relative; maximum = 10.		Average velocity of wind,—miles per hour by registering anemometer.	Average pressure of atmosphere, (Barometer reduced to 32° Fahr.)	
	Number.	Per cent of total.	Average daily range by registering thermometer.	Average of three daily observations.	Relative per cent of saturation.	Absolute grains of vapor in a cubic foot of air.	Weight in troy ounces of vapor in- haled by one person in 24 hours.	Weight in troy ounces of vapor ex- haled from air passages in 24 hours in excess of vapor inhaled.	Day—7 a. m. to 2 p. m.	Night—9 p. m. to 7 a. m.			
Number of stations in- cluded in meteorolo- gical averages*.....	684	100.0	16	11	8	8	8	8	8	8	8	11	
More than the av. No. of deaths.	October	138	20.2	18.18	b 49.01	75	3.37	2.11	9.57	3.85	3.92	10.1	29.105
	September	127	18.6	21.70	b 65.50	75	b 5.42	3.89	8.29	3.82	3.61	a 8.5	29.158
	November	111	16.2	a 13.65	34.57	b 84	2.32	1.45	10.23	3.45	3.51	11.7	a 29.048
	December	76	11.1	a 14.04	34.11	b 80	2.14	1.34	10.34	3.59	4.19	13.4	a 29.028
	August	68	9.9	19.93	b 68.16	73	b 5.83	3.64	8.04	3.92	3.92	a 7.2	a 29.035
Average	57	8.3	18.01	47.61	77	3.54	2.21	9.47	3.99	4.23	9.9	29.057	
Less than the average No. of deaths.	February	29	4.2	15.76	b 27.33	84	b 1.84	1.15	10.53	4.18	4.86	a 12.1	28.903
	January	25	3.7	12.90	b 26.90	87	b 1.77	1.11	10.57	4.20	b 4.03	8.6	29.041
	June	25	3.7	a 21.02	67.62	b 73	5.86	3.66	8.02	4.10	4.37	7.4	29.015
	April	24	3.5	a 19.57	b 47.11	b 74	b 3.19	1.99	9.69	4.02	4.83	9.9	29.025
	May	24	3.5	a 23.16	55.40	b 66	3.67	2.29	9.39	4.40	4.41	9.7	a 29.118
	July	20	2.9	a 21.33	66.67	b 70	5.30	3.31	8.37	b 3.94	b 4.15	8.5	29.055
	March	17	2.5	14.90	b 28.93	83	b 1.79	1.12	10.56	4.46	4.91	a 11.2	a 29.063

* See notes in regard meteorological data under Table 87, p. 306.

a An exception to the proposition that more than the average number of deaths from typhoid fever occurred in months when the meteorological condition named at the head of the column was greater than the average for the year, and less in months when the same condition was less than the average.

b An exception to the proposition that more than the average number of deaths from typhoid fever occurred in months when the meteorological condition named at the head of the column was less than the average for the year, and less in months when the same condition was greater than the average for the year.

TABLE 94.—Deaths returned from diarrheal diseases* in Michigan, by months, during the year 1891, and some coincident meteorological conditions, at representative stations in Michigan during the same year and months.

Months in order by number of deaths from diarrheal diseases, greatest first.	Deaths from diarrheal diseases, 1891.		Temperature, degrees, Fahr.		Humidity of atmosphere, etc., monthly averages.				Ozone,— relative; maximum = 10.		per hour by registering anemometer.	(Barometer reduced to 32° Fahr.)	
	Number.	Per cent of total.	Average daily range by registering thermometer.	Average of three daily observations.	Relative per cent of saturation.	Absolute grains of vapor in a cubic foot of air.	Weight in troy ounces of vapor in- haled by one person in 24 hours.	Weight in troy ounces of vapor ex- haled from air passages in 24 hours in excess of vapor inhaled.	Day—7 a. m. to 2 p. m.	Night—0 p. m. to 7 a. m.			
Number of stations in- cluded in meteorolo- gical averages†.....	1,238	100.0	16	11	8	8	8	8	8	8	8	11	
More than the average No. of deaths.	August	407	32.8	19.93	68.16	73	5.83	3.64	8.04	3.92	3.92	7.2	a 29.035
	September	266	21.5	21.70	65.50	75	5.42	3.39	8.29	3.82	3.61	8.5	a 29.158
	July	194	15.7	21.33	66.67	70	5.30	3.31	8.37	3.94	4.15	8.5	a 29.065
	October	147	11.9	18.18	49.01	75	a 3.37	2.11	9.57	3.85	3.92	b 10.1	a 29.105
Average		108	8.3	18.01	47.61	77	3.54	2.21	9.47	3.99	4.23	9.9	a 29.057
Less than the average No. of deaths.	June	50	4.0	a 21.02	a 67.62	b 73	a 5.86	3.66	8.02	4.10	4.37	b 7.4	a 29.015
	November	35	2.8	13.85	34.57	84	2.82	1.45	10.23	b 3.45	b 3.51	11.7	a 29.048
	May	27	2.2	a 23.16	a 55.40	b 66	a 3.67	2.29	9.39	4.40	4.41	b 9.7	a 29.118
	December	25	2.0	14.04	34.11	80	2.14	1.34	10.34	b 3.59	b 4.19	13.4	a 29.028
	January	25	2.0	12.90	26.90	87	1.77	1.11	10.57	4.20	b 4.03	b 8.6	a 29.041
	April	25	2.0	a 19.57	47.11	b 74	3.19	1.99	9.69	4.02	4.83	9.9	a 29.025
	February	22	1.8	15.76	27.33	84	1.84	1.15	10.53	4.18	4.86	12.1	a 28.996
	March	15	1.2	14.90	28.93	83	1.79	1.12	10.56	4.46	4.91	11.2	a 29.063

* Includes deaths from diarrhea, dysentery, cholera infantum, cholera (nostrae), cholera morbus. One death in unknown month is omitted.

† See notes in regard to meteorological data under Table 87, p. 306.

a An exception to the proposition that more than the average number of deaths from diarrheal diseases occurred in months when the meteorological condition named at the head of the column was greater than the average for the year, and less in months when the same condition was less than the average.

b An exception to the proposition that more than the average number of deaths from diarrheal diseases occurred in months when the meteorological condition named at the head of the column was less than the average for the year, and less in months when the same condition was greater than the average for the year.

The meteorological data employed in the preceding Tables has been kindly supplied to this department by the Secretary of the State Board of Health. In calling attention to the correspondences and differences that exist between the number of deaths returned for various months of the year from certain diseases, and the meteorological conditions characterizing those months, advantage has been taken of the system employed in the annual reports of the State Board of Health for comparing the amount of sickness in different months with the varying conditions of the weather.

For the purpose of the analysis, and without regard to the actual probabilities involved in the special statements, two propositions are laid down, or, rather, one proposition and its logical converse, and each item of climatic condition is compared with the special mortality of each month, the result being noted as a correspondence or an exception to the provisional law laid down in the proposition.

The propositions referred to are as follows, briefly stated:

PROPOSITION 1.—*The number of deaths in any month varies directly as the atmospheric data.* That is, (1) when the number of deaths in any month is **greater** than the average, the meteorological conditions (their numerical expressions) are **greater** than the average; and (2) when the number of deaths is **less** than the average, the meteorological data are **less** than the average. Exceptions to this proposition are noted in the Tables by the letter *a*.

PROPOSITION 2.—(Converse of Proposition 1.)—*The number of deaths in any month varies inversely as the atmospheric data.*

(1) The number of deaths in any month is **greater** than the average when the meteorological data are **less** than the average, and (2) the number of deaths is **less** in months when the meteorological data are **greater**. Exceptions to this proposition are marked *b* in the Tables.

It is evident that the "rule" under Proposition 1 becomes the "exception" under Proposition 2, and *vice versa*. Which proposition shall be employed in discussing the relations between deaths from any cause and climatic conditions depends on the recognition of a direct or an inverse relation between the two sets of facts, the hypothesis being adopted that furnishes the fewer exceptions.

In the tabular summary of evidence bearing on the relations of disease (as a cause of death) and climatic conditions, the distinction is seen to be marked between the "cold weather group" and the "warm weather group," especially for consumption and diphtheria of the one class and diarrheal diseases (diarrhea, dysentery, cholera infantum) on the other, in regard to temperature and humidity. The proposition was generally true for both classes that a larger number of deaths occur in months when the velocity of the wind and the pressure of the atmosphere are greater than normal, and when the per cent of ozone (day and night) was less than normal. A noticeable exception to the final clause of this statement occurs in the case of pneumonia and also of influenza. The number of deaths from these causes was larger when ozone was above the average.

The average ages of certain classes of decedents are stated in Table 96. The usefulness of the table, so far as comparison with previous years is concerned, is seriously affected by certain inconsistencies in the statements of average ages for the years immediately preceding. For this reason the average of the ten years 1878-87 is presented for comparison instead of that for 1881-90.

As compared with this ten-year average, a marked rise will be noticed in the average ages at death both of native-born and foreign-born inhabitants. Deaths from consumption alone show a lower age at death, and this is chiefly true of male decedents.

TABLE 95.—Comparison of the number of months of the year that certain direct and certain inverse relations held true in relation to the number of deaths from certain specified causes and climatic conditions.

Diseases.	Months of greater mortality than average.	Months of less mortality than average.	Meteorological conditions—(See page 319 for Propositions 1 and 2 used in showing relations between weather and deaths.)							
			Temperature.		Humidity.		Ozone.		Wind.	Barometer.
			Average daily range.	Average daily.	Relative.	Absolute.	Day.	Night.		
"Cold weather diseases"				2	1	2	2	2	1	1
Consumption.....										
Pneumonia.....				6	5	6	9	8	8	9
Influenza.....				16	11	10	3	4	9	5
Diphtheria.....				8	9	8	3	4	8	7
Croup.....				10	9	10	7	8	10	7
Scarlet fever.....				7	8	7	8	7	10	6
				7	6	7	10	9	9	6
"Warm weather diseases"				1	1	2	1	2	1	1
Typhoid fever.....				6	5	6	11	10	8	7
Diarrheal Diseases.....				9	10	9	10	9	4	8

^a Proposition 1 affirms that the number of deaths is greater than the average in months when the atmospheric data (temperature, barometric pressure, etc.) are higher; Proposition 2 affirms the reverse, i. e., deaths are more when atmospheric conditions are lower than the average. See page 319. The numbers in the Table indicate the number of months, out of the twelve, for which the proposition indicated in the heading held true.

AVERAGE AGES OF DECEDENTS.

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BLE 96.—*Showing the average ages of decedents in Michigan during the years 1889, 1890, 1891, and the average for ten years, 1878-87.*

Year.	Classes of decedents.	Average age in years and tenths of a year.			
		Totals.	Males.	Females.	Excess of males.
	Deaths as shown by registration returns.....	(?) 28.6	30.4	29.4	1.0
	Deaths of native-born inhabitants as shown by registration returns.....	(?) 25.2	23.2	22.1	1.1
	Deaths of foreign-born inhabitants as shown by registration returns.....	50.9	49.9	55.0	-5.1
	Deaths from consumption, by registration returns.....	(?) 35.1	36.7	30.4	6.3
	All aged 20 and over whose occupations were stated in registration of death.....	53.8	51.1	56.1	-5.0
	All who died aged 20 years and over as shown by registration returns.....	51.8	52.7	45.9	6.8
	Deaths of native-born inhabitants aged 20 years and over as shown by registration returns.....	(?) 59.1	54.2	50.2	4.0
	Deaths of foreign-born inhabitants aged 20 years and over as shown by registration returns.....	54.7	53.3	59.1	-5.8
	Deaths as shown by registration returns.....	(?) 28.6	30.5	29.4	1.1
	Deaths of native-born inhabitants as shown by registration returns.....	(?) 24.8	23.4	23.2	2
	Deaths of foreign-born inhabitants as shown by registration returns.....	49.9	50.0	48.4	1.6
	Deaths from consumption, by registration returns.....	(?) 43.2	34.7	29.1	5.6
	All aged 20 and over whose occupations were stated in registration returns.....	(?) 54.2	55.3	55.0	.3
	All who died aged 20 years and over as shown by registration returns.....	52.6	53.2	46.1	7.1
	Deaths of native-born inhabitants aged 20 years and over as shown by registration returns.....	(?) 59.2	54.3	50.2	4.1
	Deaths of foreign-born inhabitants aged 20 years and over as shown by registration returns.....	53.5	52.5	57.1	-4.6
	Deaths as shown by registration returns.....	30.3	31.6	30.1	1.5
	Deaths of native-born inhabitants as shown by registration returns.....	24.0	23.9	24.1	-.2
	Deaths of foreign-born inhabitants as shown by registration returns.....	53.5	54.8	51.3	3.5
	Deaths from consumption, by registration returns.....	35.4	37.4	33.5	3.9
	All aged 20 and over whose occupations were stated in registration returns.....	54.6	55.9	52.6	3.3
	All who died aged 20 years and over as shown by registration returns.....	55.0	56.1	53.7	2.4
	Deaths of native-born inhabitants aged 20 years and over as shown by registration returns.....	53.8	55.2	52.3	2.9
	Deaths of foreign-born inhabitants aged 20 years and over as shown by registration returns.....	56.6	57.7	55.7	2.0
	Deaths as shown by registration returns.....	26.6	27.2	26.1	1.1
	Deaths of native-born inhabitants as shown by registration returns.....	(?) 20.7	20.8	20.8	-----
	Deaths of foreign-born inhabitants as shown by registration returns.....	48.5	49.1	47.2	1.9
	Deaths from consumption, by registration returns.....	35.9	38.5	33.7	4.8
Average for 10 years—1878-1887	All aged 20 and over whose occupations were stated in registration returns.....	52.3	54.3	50.0	4.3
	All who died aged 20 years and over as shown by registration returns.....	52.6	54.3	50.8	3.5
	Deaths of native-born inhabitants aged 20 years and over as shown by registration returns.....	51.5	54.1	49.3	4.8
	Deaths of foreign-born inhabitants aged 20 years and over as shown by registration returns.....	53.8	54.0	53.0	1.0

Probably a transposition from 34.2. So changed, however, it would not be consistent with the average stated for the males and females dying of consumption. There were more female decedents than males, and consequently the average age of the total of both sexes ought to be closer to the average age of female decedents. Statements which seem doubtful for similar reasons are marked (?).

LONGEVITY OF DECEDENTS.

Table 97 compares the average ages, by occupations, of decedents in Michigan during the year 1891 with those for the aggregate of twenty-one years, 1870-90.

No definite conclusion can be drawn from the age attained by any single individual but when a sufficient number engaged in any one occupation can be taken collectively they form a certain basis for an estimate of average longevity or expectation of life.

The table is divided into twelve general classes, and under each class are included the various trades and professions which belong to each.

It is hoped that the facts here given will be put to some good use in throwing some light upon the comparative healthfulness of different pursuits. If the number and average age of the living among these various classes were known, it would add greatly to the value of these statistics. In fact it may be questioned whether such information is not an essential condition of *any* usefulness of such a table.

In the following subdivisions of the classes, those occupations are selected which have the highest and lowest average ages. In these exhibits care is taken to select such examples only as have cases enough to form some reasonable basis for estimates. The character of the "occupation" should also be considered, some pertaining exclusively to young persons and some to the aged.

Classes of decedents showing high average ages at death.

No.	Males.	Av. age.	No.	Females.	Av. age.
177	Retired.....	79.4	180	Weavers.....	68.5
53	Spinners.....	71.5	40	Physicians.....	57.2
30	Weavers.....	70.2	129	Nurses.....	57.0
56	Retired farmers.....	70.4	3,056	Farmers.....	56.6
25	Basket makers.....	68.4	32	Boardinghouse keepers.....	55.8
123	Capitalists.....	65.7	1,220	Farmers' wives.....	54.7
18	Surveyors.....	64.7	14,450	Housekeepers.....	54.4
457	Clergymen.....	64.1	163	Tailoresses.....	52.7

Classes of decedents showing low average ages at death.

No.	Males.	Av. age.	No.	Females.	Av. age.
60	Railroad firemen.....	21.7	40	Students.....	22.6
115	Students.....	23.8	54	Farmers' daughters.....	26.1
212	Brakemen.....	23.8	27	Prostitutes.....	26.9
14	Rivermen.....	29.5	180	Clerks.....	29.4
82	Telegraphers.....	31.5	683	Teachers.....	31.2
29	Loggers.....	33.2	462	Dressmakers.....	34.1
939	Clerks.....	34.1	65	Musicians.....	44.5
118	Woodsmen.....	34.6	20	Hairdressers.....	34.9
202	Cigarmakers.....	35.9	21	Artists.....	36.1
46	Finishers.....	35.0	15	Bookkeepers.....	35.4
207	Printers.....	36.4	182	Milliners.....	37.8
1,660	Miners.....	37.5	1,446	Domestics.....	38.5

CLASSIFIED OCCUPATIONS.

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TABLE 97.—*Exhibiting, by classified occupations, the number, aggregate and average ages of decedents in Michigan aged twenty years and over, for the year 1891 and for the twenty-one years, 1870-1890. (One-half year added to age of each as correction for months not included.)*

No.	Occupations.	Year, 1891.			Twenty-one years, 1870-1890.		
		Number of persons.	Ages in years and tenths of a year.		Number of persons.	Ages in years and tenths of a year.	
			Aggregate.	Average.		Aggregate.	Average.
	All aged 20 years and over	11,538	634,595.0	55.0	142,269	7,514,638.0	52.8
	All specified occupations	9,989	544,508.0	54.5	132,458	6,995,789.5	52.8
	Occupations unspecified	1,544	90,087.0	58.3	9,836	518,898.5	52.8
I.	<i>Cultivators of the earth</i>	2,354	150,068.0	63.8	35,030	20,93,960.5	59.8
II.	<i>Active mechanics abroad</i>	324	19,015.0	58.7	3,954	211,173.5	53.4
III.	<i>Active mechanics in shops</i>	436	21,265.0	48.8	5,061	259,626.0	51.1
V.	<i>Inactive mechanics in shops</i>	177	9,965.5	56.3	2,424	127,195.0	52.5
V.	<i>Laborers, no special trades</i>	1,048	47,044.5	44.9	13,054	581,648.5	44.6
VI.	<i>Agents, laborers abroad, etc.</i>	258	12,726.5	49.8	2,898	127,184.5	43.9
II.	<i>Seafaring men</i>	71	3,313.5	46.7	920	39,138.0	42.5
II.	<i>Soldiers</i>	2	90.0	45.0	116	6,596.0	56.9
X.	<i>Business men</i>	492	24,176.5	49.1	5,739	276,547.0	48.2
X.	<i>Professional men</i>	217	11,268.5	51.9	2,454	125,921.0	51.3
II.	<i>Unemployed</i>	916	56,013.0	61.1	7,754	483,088.0	55.9
II.	<i>Females</i>	5,238	279,619.0	53.4	62,865	3,232,560.0	51.4
I.	<i>Cultivators of the earth</i>	2,354	150,068.0	63.8	35,080	2,098,960.5	59.8
	Farmers	2,311	147,549.5	63.8	34,528	2,066,581.5	59.9
	Farm laborers	16	691.0	43.2	124	4,610.0	37.2
	Fruit growers	3	224.5	74.8	16	909.0	56.8
	Gardeners	20	1,332.0	66.6	296	17,423.0	59.1
	Nursery men	1	68.5	68.5	14	737.5	52.7
	Retired farmers	3	232.5	77.5	53	3,709.5	70.0
II.	<i>Active mechanics abroad</i>	324	19,015.0	58.7	3,954	211,173.5	53.4
	Brickmakers	4	292.0	73.0	40	2,195.5	54.9
	Carpenters and builders	230	13,368.0	58.1	2,863	152,242.0	53.1
	House movers				11	610.5	56.5
	Masons	67	3,967.5	59.5	748	39,911.5	53.4

TABLE 97.—CONTINUED.—*Occupations of decedents, etc.*

Class.	Occupations.	Year, 1891.			Twenty-one years, 1870-1890.		
		Number of persons.	Ages in years and tenths of a year.		Number of persons.	Ages in years and tenths of a year.	
			Aggregate.	Average.		Aggregate.	Average.
II	<i>Active mechanics abroad.—Con.</i>						
	Mill wrights	8	476.0	59.5	118	7,526.5	63.8
	Pavers				1	21.5	21.5
	Ship carpenters	7	494.5	62.1	75	4,008.5	53.4
	Stone cutters	8	457.0	57.1	93	4,637.5	50.1
III	<i>Active mechanics in shops</i>	496	21,265.0	48.8	5,081	259,626.0	51.1
	Bakers	9	563.5	62.6	142	7,366.5	52.1
	Blacksmiths	64	3,985.0	62.3	903	50,397.5	55.8
	Boiler-makers	5	209.5	41.9	41	2,104.0	41.3
	Book-binders	1	63.5	63.5	14	688.0	49.1
	Bottlers				4	114.0	28.5
	Brewers	10	487.0	48.7	125	5,923.5	47.4
	Broom-makers	3	181.5	60.5	12	589.0	48.6
	Cabinet-makers	17	911.5	53.6	211	11,292.5	53.5
	Carriage-makers	6	392.0	65.3	158	9,020.5	57.1
	Carriage-trimmers	1	44.5	44.5	16	743.5	46.5
	Chair-makers	2	92.0	46.0	4	171.0	42.8
	Confectioners	2	57.0	28.5	24	1,189.0	48.7
	Cooks	6	184.0	30.7	80	3,721.5	46.5
	Coopers	33	2,074.5	62.9	448	25,941.0	57.9
	Coppersmiths				11	639.0	58.1
	Dyers	2	119.0	59.5	17	838.5	49.3
	Finishers	10	813.0	31.3	36	1,296.5	36.0
	Foundrymen	2	109.0	54.5	18	811.0	45.1
	Gilders				8	280.0	32.5
	Glass-blowers				10	368.0	36.8
	Gunsmiths	1	83.5	83.5	53	3,095.5	58.4
	Machinists	23	945.5	41.1	340	16,587.5	48.8
	Marble workers	4	220.0	55.0	51	2,496.5	49.0
	Mechanics	38	2,119.0	55.8	552	28,079.5	50.9
	Millers	25	1,438.5	57.5	337	18,703.5	55.5
	Model-makers	4	118.0	29.5	21	1,104.5	52.6
	Molders	28	980.0	35.0	245	9,571.5	39.1
	Painters	64	3,112.0	48.6	622	27,117.0	43.6

CLASSIFIED OCCUPATIONS.

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TABLE 97.—CONTINUED.—*Occupations of decedents, etc.*

No.	Occupations.	Year, 1891.			Twenty-one years, 1870-1890.		
		Number of persons.	Ages in years and tenths of a year.		Number of persons.	Ages in years and tenths of a year.	
			Aggregate.	Average.		Aggregate.	Average.
III	<i>Active mechanics in shops.—Con.</i>						
	Plasterers	8	421.0	52.6	30	1,575.5	52.5
	Plumbers	11	395.5	35.9	48	1,967.5	41.0
	Potters				6	418.0	69.7
	Rope-makers	1	65.5	65.5	5	291.5	58.3
	Sail-makers				5	236.0	47.2
	Saw-filers	1	58.5	58.5	6	278.0	46.3
	Saw-makers				5	235.0	47.1
	Sawyers	4	153.0	38.2	27	1,097.5	40.6
	Smelters	1	50.5	50.5	6	247.0	41.2
	Spinners				58	3,790.0	71.5
	Stove mounters	1	35.5	35.5	21	768.0	36.6
	Tanners	1	58.5	58.5	41	2,234.5	54.5
	Tinners	5	165.5	33.1	116	4,964.0	42.8
	Turners	3	123.5	41.2	31	1,490.5	48.1
	Unclassified	23	975.5	42.4	29	1,241.5	42.8
	Upholsterers	1	42.5	42.5	24	929.0	38.7
	Wagon makers	9	534.5	59.4	88	5,326.5	60.5
	Weavers	5	331.5	66.3	25	1,775.0	71.0
	Wood carvers	2	51.0	25.5	12	525.0	43.8
IV	<i>Inactive mechanics in shops</i>	177	9,905.5	56.3	2,424	127,195.0	52.5
	Barbers	21	850.5	40.5	210	8,099.0	38.6
	Basket-makers	1	72.5	72.5	24	1,637.5	68.2
	Cigar-makers	16	614.0	38.4	186	6,646.5	35.7
	Furriers	1	72.5	72.5	2	114.5	57.0
	Harness-makers	9	528.5	58.7	198	9,477.0	47.9
	Hatters	1	51.5	51.5	20	1,099.0	55.0
	Jewelers	8	384.0	48.0	136	6,769.5	49.8
	Lithographers				7	183.0	26.1
	Printers	11	446.5	40.6	196	7,069.5	32.2
	Shoe-makers	66	4,325.0	65.5	912	55,335.0	60.7
	Silversmiths	1	68.5	68.5	7	396.5	56.6
	Tailors	42	2,552.0	60.8	526	30,396.0	57.6

TABLE 97.—CONTINUED.—Occupations of decedents etc.

Class.	Occupations.	Year, 1891.			Twenty-one years, 1870-1890.		
		Number of persons.	Ages in years and tenths of a year.		Number of persons.	Ages in years and tenths of a year.	
			Aggregate.	Average		Aggregate.	Average.
V.	<i>Laborers—No special trades</i>	1,048	47,044.5	44.9	13,054	581,648.5	44.6
	Choppers	2	84.0	42.0	8	285.0	35.6
	Ditchers	1	32.5	32.5	10	621.0	62.1
	Janitors	8	210.5	70.2	45	2,605.5	57.9
	Laborers	788	37,410.0	47.5	10,945	490,207.5	45.6
	Loggers				29	961.5	33.2
	Mill hands	4	213.0	53.3	185	7,504.5	40.6
	Miners	206	7,322.0	35.5	1,454	54,914.0	37.8
	Miscellaneous	27	1,204.5	44.6	184	8,860.5	48.4
	Porters	2	101.0	50.5	20	831.0	41.6
	Rivermen				14	413.0	29.5
	Salt packers				4	222.0	55.5
	Servants	1	39.5	39.5	40	1,587.0	39.9
	Well diggers				17	687.0	40.4
	Woodsmen	14	428.0	30.5	99	3,479.0	35.1
VI.	<i>Agents, laborers abroad, etc.</i>	258	12,726.5	49.3	2,898	127,184.5	43.9
	Agents	21	1,070.5	51.0	177	8,070.5	45.6
	Baggagemen	2	105.0	52.5	29	1,172.5	40.4
	Brakemen	14	373.0	26.5	198	5,632.5	43.6
	Butchers	29	1,426.5	49.2	334	15,900.5	47.3
	Collectors				14	688.5	49.2
	Commercial travelers	17	751.5	44.2	96	4,284.5	44.6
	Conductors	7	357.5	51.1	82	3,155.5	38.5
	Constables	1	70.5	70.5	15	711.0	47.4
	Draymen	9	506.5	56.3	106	5,575.5	52.6
	Drovers	2	123.0	61.5	61	3,088.5	50.3
	Engineers	36	1,686.0	46.8	148	6,508.5	44.0
	Expressmen	5	267.5	53.5	13	622.5	48.0
	Firemen	8	351.0	43.9	45	1,725.5	38.3
	Hackmen	4	143.0	35.8	55	2,450.5	44.6
	Hostlers	3	113.5	37.8	26	1,163.5	44.5
	Hunters and trappers	5	310.5	62.1	46	2,474.0	53.8
	Indian chief				1	104.5	104.5
	Inspectors of oil, gas, salt, etc.	2	93.0	46.5	13	550.0	42.3
	Jockeys	3	120.5	40.2	8	267.5	44.7

CLASSIFIED OCCUPATIONS.

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TABLE 97.—CONTINUED.—Occupations of decedents, etc.

388.	Occupations.	Year, 1891.			Twenty-one years, 1870-1890.		
		Number of persons.	Ages in years and tenths of a year.		Number of persons.	Ages in years and tenths of a year.	
			Aggregate.	Average.		Aggregate.	Average.
	<i>Agents, laborers abroad, etc.—Con.</i>						
	Mail carriers.....	2	66.0	33.0	9	478.0	53.1
	Milk peddlers.....	4	196.0	49.0	29	1,644.0	56.7
	Overseers and superintendents.....	10	512.0	51.2	71	3,459.5	48.7
	Peddlers.....	11	669.5	60.9	198	10,187.5	51.5
	Policemen.....	1	50.5	50.5	35	1,426.0	40.7
	Railroad engineers.....	6	206.0	34.3	328	13,409.5	40.9
	Railroad expressmen.....	3	125.5	41.5	12	544.0	45.3
	Railroad firemen.....	3	68.5	22.8	57	1,232.0	21.6
	Railroad laborers.....	2	87.0	43.5	168	7,250.0	43.2
	Railroad men.....	21	708.5	33.7	125	5,273.5	42.2
	Sextons.....				9	509.5	56.6
	Station agents.....	3	195.5	65.2	9	314.0	34.9
	Switchmen.....	7	240.5	34.4	30	1,005.0	33.5
	Teamsters.....	31	1,857.5	43.8	288	12,967.5	45.0
	Toll-gate keepers.....				5	302.5	60.5
	Waiters.....				10	359.5	36.0
	Watchmen.....	6	375.0	62.5	37	1,983.5	53.6
	Whitewashers.....				11	721.5	65.6
III.	<i>g men</i>	71	3,313.5	46.7	920	39,138.0	42.5
	Fishermen.....	7	307.5	43.9	153	7,222.0	47.2
	Officers.....	6	266.0	44.3	72	3,633.0	50.5
	Sailors.....	58	2,740.0	47.2	690	27,992.0	40.6
	United States navy.....				5	290.5	58.1
III.	<i>Soldiers</i>	2	90.0	45.0	116	6,506.0	56.9
	Officers.....				7	376.5	53.8
	Soldiers.....	2	90.0	45.0	109	6,219.5	57.1
IX.	<i>Business men</i>	492	24,176.5	49.1	5,739	276,547.0	48.2
	Auctioneers.....	1	52.5	52.5	8	464.5	58.1
	Bankers.....	7	428.5	61.2	121	7,164.5	59.2
	Book-keepers.....	25	946.5	37.9	292	13,103.5	44.9
	Capitalists.....	10	707.0	70.7	112	7,308.0	65.3
	Clerks.....	63	2,605.5	41.4	376	29,383.5	33.5
	Commission merchants.....	3	175.5	58.5	25	1,440.5	57.6

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TABLE 97.—CONTINUED.—*Occupations of decedents, etc.*

Class.	Occupations.	Year, 1891.			Twenty-one years, 1870-1890.		
		Number of persons.	Ages in years and tenths of a year.		Number of persons.	Ages in years and tenths of a year.	
			Aggregate.	Average.		Aggregate.	Average.
IX.	<i>Business men.—Continued.</i>						
	Contractors and jobbers.....	15	769.5	51.3	90	5,264.5	58.5
	Furniture dealers.....	3	207.5	69.2	11	534.5	48.6
	Grain buyers.....	1	78.5	73.5	25	1,237.5	49.5
	Grocers.....	21	989.5	46.2	259	12,735.5	49.1
	Hotel clerks.....	3	110.5	36.8	11	452.5	41.1
	Hotel keepers.....	23	1,255.5	54.6	353	18,576.5	52.6
	Insurance agents.....	9	525.5	58.4	91	4,906.0	53.9
	Justices of the peace.....				49	2,677.5	54.6
	Liquor dealers.....				26	1,189.0	45.7
	Liverymen.....	6	304.0	50.7	87	3,946.0	45.4
	Lumbermen.....	45	2,014.5	44.8	561	26,241.5	46.6
	Manufacturers.....	17	751.5	44.2	201	10,536.0	52.5
	Merchants.....	122	6,994.5	57.3	1,519	80,274.0	52.8
	Mill owners.....				9	506.5	56.2
	News agents.....	1	30.5	30.5	11	438.5	39.9
	Public officers.....	15	886.5	59.1	158	8,184.5	51.8
	Real estate dealers.....	22	1,277.0	58.0	107	6,549.0	61.2
	Restaurant keepers.....	1	77.5	77.5	29	1,418.5	48.9
	Salesmen.....	12	574.0	47.8	113	4,833.0	42.6
	Saloon keepers.....	34	1,624.0	47.8	512	22,541.0	44.0
	Undertakers.....	4	256.0	64.0	26	1,419.0	54.6
	All others.....	29	1,469.5	50.7	57	3,204.5	56.2
X.	<i>Professional men.</i>	217	11,268.5	51.9	2,454	125,921.0	51.3
	Actors.....	1	31.5	31.5	13	548.5	42.2
	Architects.....	1	65.5	65.5	15	689.5	46.0
	Artists.....	4	184.0	46.0	40	1,696.0	42.4
	Attorneys at law.....	31	1,717.5	55.4	350	18,812.0	53.7
	Civil engineers.....				43	2,521.0	58.6
	Clergymen.....	38	2,279.5	69.1	424	26,999.5	63.7
	Dentists.....	8	441.0	55.1	62	2,794.0	45.1
	Draughtsmen.....	2	61.0	30.5	5	329.0	65.8
	Druggists.....	16	691.0	43.2	172	7,647.0	44.5
	Editors.....	4	201.0	50.2	54	2,464.5	45.6
	Electricians.....	2	59.0	29.5	4	114.0	29.5
	Judges.....				5	269.0	57.8

CLASSIFIED OCCUPATIONS.

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TABLE 97.—CONTINUED.—*Occupations of decedents, etc.*

Class.	Occupations.	Year, 1891.			Twenty-one years, 1870-1890.		
		Number of persons.	Ages in years and 10ths of a year.		Number of persons.	Ages in years and 10ths of a year.	
			Aggregate.	Average.		Aggregate.	Average.
X.	<i>Professional men.—Continued.</i>						
	Lecturers.....				2	100.0	50.0
	Musicians.....	9	489.5	54.4	64	2,871.0	44.9
	Opticians.....	3	115.5	38.5	4	164.5	41.1
	Photographers.....	6	248.0	40.5	31	1,198.0	38.6
	Physicians and surgeons.....	46	2,705.0	58.8	650	36,667.0	56.4
	Stenographers.....	3	80.5	26.8	4	159.5	39.9
	Students.....	13	301.5	23.2	102	2,431.0	23.8
	Surveyors.....	1	67.5	67.5	17	1,097.0	64.5
	Teachers.....	19	901.5	47.4	283	11,960.5	42.3
	Telegraphers.....	7	192.5	27.5	75	2,899.0	31.9
	Veterinary surgeons.....	8	441.0	55.1	35	1,980.5	56.6
XI.	<i>Unemployed.</i>	916	56,013.0	61.1	7,754	438,088.0	55.9
	Paupers.....	73	3,949.5	54.1	277	16,573.0	59.8
	Pensioners.....				8	569.0	71.1
	Retired.....	47	3,442.5	73.2	180	10,619.5	61.7
	Unemployed.....	219	12,450.5	61.4	2,692	159,885.0	59.4
	Unknown.....	560	34,304.0	61.3	4,627	244,636.0	52.9
	All others.....	17	866.5	50.9	20	805.5	40.3
XII.	<i>Females</i>	5,238	279,619.0	53.4	62,865	3,232,560.0	51.4
	Actresses.....	2	61.0	30.5	4	127.0	31.8
	Agents.....	2	99.0	49.5	14	541.5	38.7
	Artists.....				21	759.5	36.2
	At home.....	19	838.5	44.1	396	12,377.5	31.2
	Bankers.....	1	48.5	48.5			
	Basket makers.....				14	698.0	49.8
	Boarding-house keepers.....	1	56.5	56.5	31	1,730.0	55.8
	Book-keepers.....	2	62.0	31.0	13	469.5	36.1
	Cigar-makers.....	1	22.5	22.5	6	166.0	27.7
	Clerks.....	15	396.5	26.6	115	3,424.0	29.8
	Confectioners.....				6	259.0	43.2
	Cooks.....	16	651.0	40.7	46	1,825.5	39.7
	Domestics.....	161	7,302.5	44.7	1,235	28,488.0	27.7
	Dress-makers.....	37	1,277.5	34.5	425	14,489.5	34.1
	Druggists.....				3	154.5	51.5

TABLE 97.—CONTINUED.—*Occupations of decedents, etc.*

Class.	Occupations.	Year, 1891.			Twenty-one years, 1870-1890.		
		Number of persons.	Ages in years and tenths of a year.		Number of persons.	Ages in years and tenths of a year.	
			Aggregate.	Average.		Aggregate.	Average.
XII	<i>Females.—Continued.</i>						
	Factory employes.....	4	186.0	65.5	9	239.5	26.6
	Farmers.....	146	9,082.0	62.2	2,910	163,906.0	56.3
	Farmers' daughters.....	2	51.0	25.5	52	1,864.0	28.2
	Farmers' wives.....	258	13,324.5	54.6	967	52,906.5	54.7
	Hair dressers.....				20	607.5	30.9
	Hotel keepers.....	2	75.0	37.5	58	2,719.0	46.9
	House keepers.....	814	45,596.0	56.0	12,636	740,277.5	54.3
	House wives.....	1,806	98,140.5	51.8	27,444	1,314,291.5	47.9
	Houseworkers.....	110	3,944.0	35.9	1,360	63,234.5	46.5
	Laborers.....	30	1,456.0	48.5	272	12,206.5	45.6
	Laundresses.....	2	109.0	51.5	10	418.0	41.8
	Manufacturers.....				9	470.5	52.3
	Matrons.....	9	452.5	50.4	96	5,146.5	53.5
	Merchants.....	5	266.5	53.3	64	2,344.0	53.8
	Millers.....	1	72.5	72.5	8	424.0	53.0
	Milliners.....	8	377.0	47.1	174	6,506.4	37.4
	Ministers.....				5	290.5	58.1
	Miscellaneous.....	7	365.5	52.2	172	8,042.0	46.8
	Musicians.....	1	22.5	22.5	26	899.5	34.2
	Music teachers.....	6	196.0	32.5	8	116.0	26.7
	Nurses.....	27	1,484.5	54.9	102	5,867.0	57.5
	Paupers.....	21	1,193.5	56.8	121	7,320.5	59.7
	Physicians.....	2	174.5	87.2	27	2,112.5	57.1
	Printers' Employées.....	4	123.0	30.8			
	Prostitutes.....	3	96.5	31.8	24	631.5	26.3
	Public officers.....	1	57.5	57.5			
	Railroad employes.....	2	98.0	49.0			
	Saloon-keepers.....				11	549.0	49.4
	Seamstresses.....	9	284.5	31.6	277	11,177.5	40.4
	Spinners.....				11	628.5	57.1
	Stenographers.....	1	24.5	24.5	5	142.0	28.4
	Students.....	4	83.0	22.0	26	824.5	22.9
	Tailoresses.....	9	487.5	54.2	154	8,066.5	52.6

CLASSIFIED OCCUPATIONS.

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TABLE 97.—CONCLUDED.—Occupations of decedents, etc.

No.	Occupations.	Year, 1891.			Twenty-one years, 1870-1890.		
		Number of persons.	Age in years and tenths of a year.		Number of persons.	Age in years and tenths of a year.	
			Aggregate.	Average.		Aggregate.	Average.
II	<i>Females.—Continued.</i>						
	Teachers.....	48	1,808.0	33.5	685	19,785.0	31.1
	Telegraphers.....	1	40.5	40.5	9	224.5	24.9
	Unemployed.....	558	32,149.5	58.1	6,326	364,719.5	57.6
	Unknown.....	984	55,783.0	56.7	5,209	274,362.5	52.7
	Washer-women.....	6	309.0	51.5	82	3,762.0	45.9
	Weavers.....	10	689.0	68.9	120	8,219.5	68.5
	Widows.....				17	1,216.5	71.6

APPENDIX.

LAWS OF MICHIGAN

CONCERNING THE

REQUIREMENT OF A CIVIL LICENSE TO MARRY,
THE SOLEMNIZATION OF MARRIAGES,

AND THE

Record. Return and Compilation of Births, Marriages, and Deaths :

WITH SUGGESTIONS TO PERSONS AUTHORIZED TO SOLEMNIZE MARRIAGES, AND INSTRUCTIONS RELATING TO THE COLLECTION OF BIRTHS AND DEATHS BY SUPERVISORS AND ASSESSORS.

LAWS RELATING TO THE SOLEMNIZATION AND RECORD OF MARRIAGES.

CHAPTER 236, HOWELL'S ANNOTATED STATUTES, 1882

MARRIAGE AND THE SOLEMNIZATION THEREOF.

Chapter eighty-three of Revised Statutes of 1846, with amendments.*

Who shall be capable of contracting marriage.

(6209.) SECTION 1. Every male who shall have attained the full age of eighteen years, and every female who shall have attained the full age of sixteen years, shall be capable in law of contracting marriage, if otherwise competent.

Marriage is a civil contract.

(6210.) SEC. 2. Marriage, so far as its validity is concerned, is a civil contract to which the consent of parties capable in law of contracting is essential.

Who shall not intermarry.

(6211.) SEC. 3. No man shall marry his mother, grandmother, daughter, granddaughter, stepmother, grandfather's wife, son's wife, grandson's wife, wife's mother, wife's grandmother, wife's daughter, wife's granddaughter, nor his sister, brother's daughter, sister's daughter, father's sister, or mother's sister.

Ibid.

(6212.) SEC. 4. No woman shall marry her father, grandfather, son, grandson, stepfather, grandmother's husband, daughter's husband, granddaughter's husband, husband's father, husband's grandfather, husband's son, husband's grandson, nor her brother, brother's son, sister's son, father's brother, or mother's brother.

Who not to marry.

(6213.) SEC. 5. No marriage shall be contracted whilst either of the parties has a former wife or husband living, unless the marriage with such former wife or husband shall have been dissolved.†

Insane persons, etc. Marriages declared valid.

(6214.) SEC. 6. No insane person or idiot shall be capable of contracting marriage. All marriages heretofore contracted between white persons and those wholly or in part of African descent are hereby declared valid and effectual in law for all purposes, and the issue of such marriages shall be deemed and taken legitimate as to such issue, and as to both of the parents.

* For prior statutes relative to the solemnization of marriages, see Woodward Code, p. 42; Case Code, p. 111; Code of 1820, p. 259; Rev. of 1827, p. 280; Laws of 1832, p. 6; Rev. of 1838, p. 329; R. S. of 1833, p. 333.

† Act 137, Laws of 1887, prohibits divorced persons from re-marrying for a period specified in the decree, not to exceed two years.

(6215.) SEC. 7. Marriages may be solemnized by any justice of the peace in the county in which he was chosen, and they may be solemnized throughout the State by any minister of the gospel who has been ordained according to the usages of his denomination, and who is a pastor of any church or churches in this State, or who shall continue to preach the gospel in this State: (*Provided.*)*

Marriage, by whom solemnized.

(6216.) SEC. 8.*

(6217.) SEC. 9. In the solemnization of marriage, no particular form shall be required, except that the parties shall solemnly declare, in the presence of the magistrate or minister and the attending witnesses, that they take each other as husband and wife; and in every cause there shall be at least two witnesses, besides the minister or magistrate, present at the ceremony.

No particular form required.

SEC. 10.† SEC. 11.† SEC. 12.† SEC. 13.† SEC. 14.*

(6219.) SEC. 15. If any person shall undertake to join others in marriage, knowing that he is not lawfully authorized so to do, or knowing of any legal impediment to the proposed marriage, he shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be punished by imprisonment in the county jail not more than one year, or by a fine not less than fifty, nor more than five hundred dollars, or by both such fine and imprisonment, in the discretion of the court.

Punishment of persons, unauthorized, etc.

(6220.) SEC. 16. No marriage solemnized before any person professing to be a justice of the peace or a minister of the gospel, shall be deemed or adjudged to be void, nor shall the validity thereof be in any way affected on account of any want of jurisdiction or authority in such supposed justice or minister: *Provided*, The marriage be consummated with a full belief on the part of the persons so married, or either of them, that they have been lawfully joined in marriage.

Marriage not void in certain cases.

(6221.) SEC. 17. The preceding provisions of this chapter, so far as they relate to the manner of solemnizing marriages, shall not affect marriages among the people called Friends or Quakers; nor marriages among people of any other particular denomination having, as such, any peculiar mode of solemnizing marriages; but such marriages may be solemnized in the manner heretofore used and practiced in their respective societies or denominations.

Marriages among Quakers, etc.

(6222.) SEC. 18. The original certificates and records of marriage made by the minister or justice, as prescribed in this chapter, and the record thereof made by the county clerk, or a copy of such record, duly certified by such clerk, shall be received in all courts and places as presumptive evidence of the fact of such marriage.

Certificates and records made evidence.

* Repealed by Act 128, Laws of 1887.

† Repealed by Act 191, Laws of 1867, p. 266, Sec. 10.

ACT NO. 128, LAWS OF 1887.

FOR THE REQUIRING OF A CIVIL LICENSE IN ORDER TO MARRY,
AND THE DUE REGISTRATION OF THE SAME, AND TO PROVIDE
A PENALTY FOR THE VIOLATION OF THE PROVISIONS OF
THE SAME.*

Persons intend-
ing marriage
must obtain
license.

SECTION 1. *The People of the State of Michigan enact,*
It shall be necessary for all parties intending to be married to obtain a marriage license from the county clerk of the county in which either the man or woman resides, and to deliver the said license to the clergyman or magistrate who is to officiate, before the marriage can be performed. If both parties to be married are non-residents of the State, it shall be necessary to obtain such license from the county clerk of the county in which the marriage is to be performed.†

Where non-
residents must
obtain license.

Secretary of
State to furnish
forms, blanks,
etc.

SEC. 2. Blank forms for marriage license and certificate, as also proper books of registration ruled for the items contained in said forms, shall be prepared by the Secretary of State, and shall be furnished by him to the county clerk of the various counties of the State in quantities needed. The blank forms for license and certificate shall be made in duplicate and shall provide spaces for the entry of the following items, to wit: The full name, age, color, place of residence, place of birth, occupation, and if known, the father's name, and mother's maiden name, of each of the parties to be married; the number of times either of the parties may have been previously married; the bride's maiden name, in case she is a widow; the date of the giving of the license; the signature of the county clerk; the date and place of the marriage, the names and residences of two witnesses to the marriage, and the certification of the officiating clergyman or magistrate, that the marriage contemplated by the license has been performed by him. And the Secretary of State shall furnish to the county clerks of the various counties of the State, blank forms of affidavit, containing the requisite allegations, under the laws of this State, of the competency of the parties to unite in the bonds of matrimony, and any party applying for license to marry, shall cause such an affidavit to be made and filed with the county clerk, as a basis for the issuing of the license; and such affidavit, together with the license, shall be made a matter of record of said clerk's office.

Form of license.

Secretary of
State to furnish
to county clerks
blank forms of
affidavits, etc.

* This act went into effect Sep. 27, 1887.

† This section, being Act No. 255, Laws of 1889, went into effect July 2, 1890.

SEC. 3. It shall be the duty of the county clerk, on application being made to him, to fill out the blank spaces of the license according to the sworn answer of the applicant taken before him or some person duly authorized by law to administer oaths. If it shall appear that the parties are legally entitled to be married, the county clerk shall sign the license in certification of the fact, that it is properly issued, and he shall make a correct copy thereof in the books of registration. For his services connected therewith he shall be entitled to a fee of fifty cents, to be paid by the party applying, and at the time of the issuing of the license. He shall give the license, thus filled out and signed by him, together with the blank form, of certificate, to the party applying for delivery to the clergyman or magistrate who is to officiate at the marriage. On the return of the license to the county clerk (as specified in section four, below), with the certificate of the clergyman, or magistrate, that the marriage has been performed, he shall record in the book of registration, in their proper places of entry, the date and place of the marriage, the names and residences of two witnesses to the marriage, and the name of the officiating clergyman or magistrate. All licenses and certificates so issued and returned shall be preserved on file in the office of the county clerk, and he shall, as often as once in three months, make a faithful report to the Secretary of State of all licenses and certificates issued and received by him.

Duty of county clerk.

Fees.

Licenses and certificates, where filed, etc.

SEC. 4. It shall be the duty of the clergyman or magistrate, officiating at a marriage to fill out the spaces of the certificate left blank for the entry of the time and place of the marriage, the names and residences of two witnesses, and his own signature in certification that the marriage has been performed by him. He shall separate the duplicate license and certificate and retain one-half for his own record, and he shall return the other half within ten days to the county clerk issuing the same.

Duty of officiating clergyman or magistrate.

SEC. 5. Any county clerk who shall refuse to give a license to persons properly applying and legally entitled to be married, or who shall violate any of the provisions of this act, shall be adjudged guilty of a misdemeanor, and shall be punished by a fine of not less than twenty-five dollars or more than one hundred dollars, or in default of payment thereof by imprisonment in the county jail for a term of thirty days.

Penalty for violating act by county clerk.

SEC. 6. Any clergyman or magistrate who shall join together in marriage parties who have not delivered to him a properly issued license, as provided for in this act, or who shall violate any of the provisions of this act, shall be adjudged guilty of a misdemeanor, and shall be punished by a fine of one hundred dollars, or, in default of payment thereof, by imprisonment in the county jail for a term of ninety days.

Penalty for violation, by clergyman, etc.

SEC. 7. Any person whose duty it shall be to return a marriage certificate to the county clerk, who shall neglect to return said certificate, shall be adjudged guilty of a misdemeanor, and

Penalty for neglect to return certificate.

shall be punished by a fine of not exceeding one hundred dollars or ninety day's imprisonment, or both in the discretion of the court.

False swearing
in application,
perjury.

SEC. 8. Any person applying for a marriage license who shall swear to a false statement therein, shall be guilty of perjury and shall be prosecuted therefor under the general laws of the State.

Filing and
recording of
reports.

SEC. 9. All reports of marriage, sent by the county clerks of the various counties of the State to the office of the Secretary of State, shall be preserved on file in that office, and a proper record thereof shall be made and kept.

Records of
licenses, etc.,
prima facie
evidence.

SEC. 10. The record of any license to marry, or of any marriage certificate in any county clerk's office, or a certified copy thereof, shall be *prima facie* evidence in any court or proceedings in this State, with the same force and effect as if the original were produced, both as to the facts therein contained and as to the genuineness of the signatures thereto.

Acts repealed.

SEC. 11. All other acts and parts of acts which are inconsistent herewith are hereby repealed.

LAWS RELATING TO THE COLLECTION OF BIRTHS AND DEATHS;

BEING CHAPTER NINETY-THREE OF HOWELL'S
ANNOTATED STATUTES.

AN ACT TO PROVIDE FOR THE REGISTRATION OF BIRTHS,
MARRIAGES AND DEATHS, BEING ACT NO. 194 OF 1867, AS
AMENDED BY ACT NO. 125, OF 1869.*

(858.) SECTION 1. *The People of the State of Michigan* enact, That it shall be the duty of the supervisor of each township, and the supervisor or assessor of any city or ward therein, in this State, between the tenth day of April and the first day of June, in the year eighteen hundred and sixty-nine, to ascertain by actual inquiry or otherwise, of the inhabitants thereof, the births and deaths which have occurred in their respective townships, cities or wards, from and including April fifth, eighteen hundred and sixty-eight, to and including December thirty-first, eighteen hundred and sixty-eight, together with the facts relative thereto, as are hereinafter provided for, and shall make an accurate return thereof to the clerk of the county in which such township or city is situated, on or before the first said day of June; and for such service shall receive ten cents for each birth and death so returned by them to be paid by the county in which such returns are made. In the year eighteen hundred and seventy, and in each and every year thereafter, it shall be the duty of the officers above mentioned, between the tenth day of April and the first day of June, to ascertain, by actual inquiry or otherwise, of the inhabitants thereof, the births and deaths which have occurred in their respective townships, cities, or wards, during the year ending on the last day of the preceding December, and shall make the return and receive therefor the compensation above provided for: *Provided*, That in the city of Detroit, the duties required by this act to be performed by supervisors and assessors shall be performed by persons appointed by the common.

Duties of supervisors and assessors.

In 1869 returns to be made from April 5 to Dec. 31, 1868.

Return to county clerk.

In 1870 and thereafter.

Returns to include from January to December last preceding.

Statistics, how obtained.

Compensation. Provide relative to the city of Detroit.

* See Act No. 125, Laws of 1857, printed herewith, for registration of marriages.

Duty of common council.	council, for that purpose; and it shall be the duty of the common council on or before the tenth day of April, in each year, to appoint such number of persons in each ward of said city as shall be necessary to perform said duties within the time limited by this act; and such person shall possess all the authority conferred upon, and perform all the duties required of supervisors and assessors by this act, within the territory assigned them, respectively by the common council, and shall receive such compensation for their services, not exceeding the sum allowed by this act to supervisors and assessors, as shall be fixed by the common council, to be paid by the county of Wayne, and shall be liable to the same penalties for refusal or neglect to perform any of said duties.
Persons to be appointed by.	
Compensation of persons so appointed.	
How paid.	
Penalties.	
County clerks; duties of.	(859.) SEC. 2.* (860.) SEC. 3. It shall be the duty of the county clerks of the several counties of this State, on receiving the returns of such births, marriages, and deaths to record the same at length in separate books, to be provided at the expense of the State by the Secretary of State, for that purpose, with proper indexes thereto. The births, marriages, and deaths shall be numbered and recorded in the order in which they are received by the clerk, and the record of marriages shall be indexed, using both the name of the bridegroom and bride. The record of births shall state, in separate columns, the date of the birth, the name of the child (if it have any), the sex and color of the child, the place of birth, the christian and surname of both parents, the residence and nativity of the parents, the occupation of the father, and the date the record was made: <i>Provided</i> , That in case the child has no christian name, such name shall be obtained and reported to the county clerk in the next annual report of the supervisor or assessor, and such christian name shall be distinctly designated in such report as the christian name belonging to a child previously reported, and shall be properly entered by said county clerk, in the blank left for such christian name in his book of record; and it shall be the duty of the several county clerks, on or before the tenth day of April in each year, to give to the officers required to make the said returns, lists of such children whose christian names have not been previously reported in their respective towns, cities or wards. The record of marriages shall state, in separate columns, the date and place of marriage, the christian and surname of the bridegroom and bride, and the maiden name of the bride, if a widow, the color, age, and place of birth of each, the residence of each at the time of marriage, the occupation of the bridegroom, and the name and official station of the person by or before whom they were married, the names and residences of at least two witnesses present at such marriage, and the date when such record was made.† The record of deaths shall state in separate columns, the date of the death, the christian and surname of the deceased, the sex and
Births, marriages and deaths to be numbered and indexed.	
Record of births shall state.	
Proviso.	
Record of marriages shall state.	
Record of deaths shall state.	

* Section 2 relates solely to the old method of marriage returns.

† Amended by Act 128, Laws of 1887, which see on previous pages for amended provisions in regard to marriages.

color, whether married or single, the age in years, months and days, the place of death, the disease or apparent cause of death, the nativity of the deceased, and the occupation, if any, and the names, residence of the parents, if known, and the date when such record was made. The clerks of the several counties shall annually, on or before the first day of September make and transmit to the Secretary of State, a certified copy of the records of his office, of all the births, marriages,* and deaths reported in their respective counties for the year ending December thirty-first, last preceding. And each county clerk shall receive for the record of each birth and death in his office three cents, and three cents for each birth, marriage, and death, returned by him to the Secretary of State, to be paid by the county, and shall be compensation in full for all services required by this act to be performed by him.

Return of
county clerk.

Compensation.

(861.) SEC. 4. The Secretary of State shall prepare and furnish to the county clerks of the several counties in this State, blank books of suitable quality and size, with proper rulings and headings, to be used as books of record, in carrying into effect the provisions of this act. He shall also prepare and furnish blank "forms of returns," as hereinbefore specified accompanied with such instructions and explanations as may be necessary to insure uniformity in such returns, which blanks shall be forwarded to the several county clerks on or before the first day of March in each year; and the said county clerks shall deliver the same to the supervisors or assessors of the several townships, cities or wards therein, in their respective counties, on or before the tenth day of April.

Secretary of
State shall fur-
nish all blank
books, blanks,
instructions, etc.

(862.) SEC. 5. It shall be the duty of the Secretary of State to receive the returns made in pursuance of the third section of this act, and he shall cause the same for each year to be bound together, in one or more volumes, at the expense of the State, and make indexes thereto; and with such assistance* as may be voluntarily rendered by any authorized committee appointed by the medical faculty of the University of Michigan or by any regularly authorized medical society in this State, for that purpose, he shall prepare such tabular statements, results, and deductions therefrom as will render them of practical utility, and make report thereof, annually, to the Governor of the State, which report may be ordered published and distributed in such manner as the Legislature may from time to time direct.

Returns to be
bound and
indexed.

Secretary of
State to make
annual report.

(863.) SEC. 6. Every justice of the peace, minister of the gospel, and all other persons authorized by the laws of this State to solemnize marriages, and clerks or keepers of records of the meetings in which any marriage among the Friends or Quakers shall be solemnized, who shall neglect or refuse to make a record of such marriage, or to deliver to the county clerk of the county in which the marriage took place, a certified copy of such record, or who shall refuse, on demand, to deliver to the parties to such marriage the certificate thereof, as required by section two of this act, or who shall willfully

Neglect to keep
records.

Neglect to
deliver certifi-
cates.

* See note on p. 343 in regard *

make a false or fictitious entry in his record of marriages or in the certified copy of such record delivered to the county clerk, or in the certificates of marriages, delivered to the parties thereto, shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be punished by fine not exceeding one hundred dollars, and in default of paying the same, shall be imprisoned in the county jail of the county in which such conviction shall be had, until said fine be paid, but not to exceed the period of ninety days.*

Penalty.

Certificate of death.

(864.) SEC. 7. Every physician, surgeon, or midwife, who shall have been in attendance upon any deceased person, shall, upon application of any supervisor or assessor of the township, city, or any ward thereof, in which such death occurred, make out and deliver to such supervisor or assessor a certified statement, without fee, containing the name of the disease, or cause (if known), producing the death of such person; and any medical attendant who shall neglect or refuse to give such statement, or who shall willfully make a false statement in relation to such death, shall for such offense be liable to pay a fine of not less than ten nor more than fifty dollars, and the costs of prosecution, which fine the said supervisor or assessor is hereby required to sue for and collect, in his official character.

Refusal to make certificate.

Penalty.

Facts to be obtained by supervisor.

(865.) SEC. 8. It shall be the duty of each supervisor or assessor to obtain the facts in relation to births and deaths within his township, city or any ward therein (not otherwise obtained), from the heads of families, the keepers, overseers, or superintendents of asylums, hospitals, jails, prisons, work-houses, almshouses, houses of correction and similar institutions, the keepers of hotels, public and private boarding houses, and the masters or chief officers of steamboats and sail vessels, navigating any of the waters of this State, and touching at any port of entry therein, in which such births or deaths occurred; and if either of the above named persons shall refuse to give such information, then the same shall be obtained by such supervisor or assessor from any person having a knowledge of the facts in relation to such birth or death; and if the supervisor or assessor shall have reason to believe that any person or persons willfully misrepresented or concealed any facts relative to such birth or death in his township, city, or any ward therein, which he cannot otherwise obtain, he may examine such person or persons on oath (which oath such supervisor or assessor is hereby empowered and authorized to administer), in relation to any birth or death within his township, city, or any ward therein, of which such person or persons may have any knowledge or information; and if any person, after being duly subpoenaed (as provided for compelling the attendance of witnesses in justices' courts), by such supervisor or assessor, for the purpose aforesaid, shall neglect or refuse to appear before such officer, or, appearing, shall refuse to be sworn and testify in relation to such matter, he shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished

Refusal to furnish.

Obtained under oath.

Neglecting to answer a subpoena.

* The provisions of this section are undoubtedly repealed by Act 123, Laws of 1897, except so far as relates to the penalty for refusing to deliver to the parties to a marriage a certificate thereof.

therefor by a fine not exceeding fifty dollars, and in default of ^{Penalty.} paying the same shall be imprisoned in the county jail of the county in which such conviction shall be had, until said fine be paid, but not exceeding ninety days; and any person who after being duly sworn as aforesaid, shall willfully make any false ^{Perjury.} statement in relation to any birth or death, about which he is required to testify, shall be deemed guilty of willful and corrupt perjury: ^{Proviso.} *Provided*, That no person shall be required to answer any question which will tend to criminate himself or herself upon any such examination.

(866.) SEC. 9. In case of the refusal or neglect by any of the ^{Neglect to perform duties.} officers mentioned in this act, to perform any of the duties hereinafore required of them or either of them, to be done and performed by any of the provisions herein contained, such officer shall be liable to a fine not to exceed one hundred dollars, and ^{Penalty.} the costs of prosecution; and the prosecuting attorney in each county is hereby required to prosecute, in the name of the people of the State of Michigan, all persons in his county who shall willfully violate any of the provisions of this act; and the said supervisor or assessor of any township, city, or any ^{Misdemeanor.} ward therein, may be prosecuted for a misdemeanor under the section, and upon conviction, punished as therein provided for.

NOTE ON SECTION 5, ACT NO. 194, LAWS OF 1867 (see p. 341, preceding). In accordance with the provision of this section, the early Registration Reports were prepared under the supervision of representatives of the State Medical Society, as follows: 1867, Dr. I. H. Bartholomew; 1868, Dr. George E. Ranney; 1869, 1870, Dr. Henry B. Baker. Under Section 10, Act No. 81, Laws of 1873, which provided "The Secretary of the State Board of Health shall be Superintendent of Vital Statistics. Under the general direction of the Secretary of State, he shall collect these statistics and prepare and publish the Report required by law relating to births, marriages and deaths," the Reports for the years 1871 to 1890, inclusive, were prepared under the supervision of Dr. Baker, as Secretary of the State Board of Health. Act No. 107, Laws of 1883, amended the preceding section to read as follows: "The Secretary of the State Board of Health may publish in his Annual Report such information, or statistics as is provided for in this act," since which time the Registration Report has been prepared entirely by the Department of State.

SUGGESTIONS TO PERSONS AUTHORIZED TO SOLEMNIZE MARRIAGES IN MICHIGAN.

A thorough knowledge of the law concerning the solemnization and return of marriages in Michigan is necessary to a correct performance of the duties of persons authorized to solemnize marriages.

The most frequent violation of the law is in the marriage of persons *under the lawful age*, which is: for males eighteen (18) years, and for females sixteen (16) years. See Section 6209, Howell's Annotated Statutes, 1882, printed on a previous page. The penalty for the violation of this provision is a forfeit of not exceeding one hundred (100) dollars. See Section 6, Act 128, Laws of 1887, printed on a previous page.

In the record and return of marriages, every item specified in the law should be carefully ascertained, and correctly and plainly written. No item should be omitted, and nothing taken for granted, as is often the case with the fact as to COLOR of persons married.

In recording the BIRTHPLACE of each, the State, or country should be distinctly given in each case. This will avoid the difficulty of ascertaining the nativity of persons whose birthplace is returned "Holland," "Hanover," "Denmark," "Wales," "Paris," etc.,—names of places which may be either in the United States or Europe. If such or similar names occur, please state whether it is Holland, *Michigan*, or Holland, *Europe*, and so for each case. Never return the birthplace "America," as we cannot know whether it is in the United States, and are therefore compelled to compile it with the "Unknown."

Blanks for the return of marriages to the county clerk are not required under the present law, as the return of the license with the certificate properly filled out constitutes the proper return to the county clerk.

The license to marry can only be procured from the several county clerks, but the affidavit necessary to procure the same may be made before any person authorized to administer oaths, and blank affidavits can be had from any county clerk or from the office of the Secretary of State.

CIRCULAR OF INSTRUCTIONS RELATING TO THE COLLEC-
TION OF BIRTHS AND DEATHS BY SUPERVISORS
AND ASSESSORS.

The following circular is presented for reference on the part of those entrusted with the collection of the data on which the Vital Statistics relating to births and deaths in this State are based. It incidentally throws much light on the character of the large number of faulty and indefinite returns of Causes of Death annually received, many of which a few intelligent questions on the part of the enumerating officer would put into satisfactory shape.

As indicated by the date below, this circular is mailed in March to the supervisors then in office with the request that they be handed to their successors, in case such are elected, as soon after the April election as convenient. This is done in order that many supervisors who continue in office, may have a longer time to familiarize themselves with the facts required. Additional instructions are also sent with the schedules to be delivered by the county clerk.

Some criticism may be made, and with a certain degree of truth, that these instructions leave unasked for many points upon which specified information would be very desirable. It must be remembered that the entire enumeration is made by persons unfamiliar with medical terms, and that any improvement in the fullness and accuracy of the causes of death returned can only be made by very slow degrees. An attempt to make any marked changes, as, for instance, to distinguish primary and secondary causes of death, would, by causing uncertainty and confusion in the minds of the enumerators, defeat its purpose and produce even less satisfactory results than obtained at present. Until a system of registration is adopted in which the returns of causes of death are drawn directly from certificates issued by the medical attendants, the best results cannot be obtained.

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[PLEASE PRESERVE THIS CIRCULAR FOR REFERENCE.]

STATE OF MICHIGAN,
OFFICE OF THE SECRETARY OF STATE, }
Lansing, March 1, 1893.

To the Supervisors and Assessors of Michigan:

Your careful attention is respectfully called to the provisions of Act No. 194 of 1867, as amended by Act No. 125 of 1869, "To provide for the registration of births, marriages and deaths." See Howell's Annotated Statutes, sections 858, 860, 864, 865, 866, or sections 581, 582, 583, 584, 585

of Michigan Township Officers' Guide. The law referred to in these sections is printed with, and made a part of the instructions of this circular.

By this law it is made your duty to ascertain, by actual inquiry or otherwise, the births and deaths which have occurred in your township, city or ward during the year ending on the last day of December, 1892, together with the facts relative thereto, and to make an accurate return thereof to the county clerk on or before the first day of June, 1893. The supervisor of the township should ascertain and return the births and deaths which have occurred within the limits of any incorporated or unincorporated village within his township.

This collection of births and deaths is to be made between the tenth day of April and the first day of June of the present year, 1893. The births and deaths enumerated are all those that occurred in the State during the previous year, 1892.

Blank forms, with headings and spaces for all the facts you are to return, have been sent to your county clerk, who will deliver them to you on or before the tenth day of April. This blank forms are arranged to receive certain items of information required by law.

On the birth blanks there should be entered (1) date of birth, giving month, day and year; (2) surname and christian name if one be given at time of enumeration. Should christian name not be given at time of your enumeration it should be obtained at the time of taking the next enumeration. In like manner you are to collect a list of christian names of children born in 1891, but not named at the time of inquiry by your predecessor, in 1892. Your county clerk will furnish you a list of such children. (3) sex; (4) color; (5) whether still-born, twins, triplets; or illegitimate; (6) birthplace, giving township or city; (7) full name of each parent; (8) residence of parents; (9) birthplace of each parent respectively, giving only State, or country, if foreign; (10) occupation of father.

On the death blanks should be entered (1) date of death, giving month, day and year; (2) full name of the deceased; (3) sex; (4) color; (5) whether single, married, widower or widow; (6) age at death, giving number of years, months and days; (7) place of death, giving township or city; (8) disease, or cause of death; (9) birthplace, giving State, or country, if foreign; (10) occupation, giving that of females as well as males in all cases where they are engaged in a definite occupation; (11) full names of both parents; (12) residence of parents.

A return should be made to the county clerk by every supervisor or assessor whether any births or deaths have occurred in the township or ward or not. This is necessary in order to show that the enumeration has been performed in every township and ward.

All blank spaces in the above schedules of births and deaths must be filled out in some manner.

Ditto marks should not be used, but each item should be written out in full.

Particular pains should be taken to fill in the names of county, township, year, signature and official station of enumerator before forwarding returns to the county clerk.

However important it is that all blank spaces shall be filled, it is still more important that they shall only be filled correctly. Do not fill a blank vaguely or from surmise, when, upon a little inquiry, facts can be obtained.

Inquiries are to be made of heads of families and other persons specified

in section 965 of Howell's Annotated Statutes, Section 584 of Township Officers' Guide, and if any such person shall refuse to give information, then the same shall be obtained by the assessor or supervisor from any person having knowledge of the facts in relation to such birth or death. And it is your duty to examine under oath any person or persons that you have reason to believe have wilfully misrepresented or concealed any facts relative to such birth or death, which facts you cannot otherwise obtain. You are expressly empowered to administer an oath for this purpose by the law. Read this section carefully, as pointed herewith, to learn your full powers under the law to obtain a full and truthful answer to all the inquiries the law directs you to make.

If any of the information called for by law cannot be obtained, write in such place of the blank form "Unknown," that it may be evident the item has not been overlooked.

All names of persons and places should be plainly written and correctly spelled. If in any instance a birth or death is returned which did not occur in your own county, the name of the county should be given; if not in this state, the state should be given. If it occurs with such names as "Holland," "Denmark," "Wales," "Berlin," etc., designate whether United States or foreign, by giving country or state, or by writing "Europe." Where there is a township and village or city of the same name, state which it is in order to make possible the compilation by town or villages.

Every still-birth should be reported as a birth and as a death. On death blanks write "Stillborn" in column for "Cause of Death." A still-born child is the born dead. For one that lives an appreciable time, hours or days, after birth, another cause of death should be assigned.

Occupations should be stated for each person whenever possible. Space for "Occupation" should be always filled, even though females may be living at home with husband or father, and have no definite occupation. In such cases it is frequently correct and absurd to fill in "Housemaid," "Housekeeper," and the like. Report simply "At home," "No special occupation," "Housewife," "Wife of farmer," etc. There are explicit enough as to engagement in domestic duties.

Supervisors and assessors should state whether deaths were of insane, idiotic or deaf and dumb persons. This is especially desirable concerning those who die at the expense for the insane, and at other State institutions, and also at the penitentiary.

CAUSE OF DEATH

In assigning a *cause of death* to any case, in the first instance the testimony of the family of the deceased is to be taken by the collector of deaths. If an accurate and truthful answer is given, in many cases a few questions will clear up any difficulty, and there will be no necessity of resorting to professional assistance in order to get a satisfactory return. The plain copy of the family should be stated when it is possible with no attempt to draw it up in medical phraseology. The suggestions given below are only for the purpose of eliciting a correct and truthful reply when a very obscure and doubtful statement is originally made and persisted in, or when it is not possible, in order to affect the return, where a family statement and accurate statement can otherwise be obtained. Many reported causes of death are not sufficiently definite to be of any

service whatever. The following are instances copied from returns: "Complication of Disease," "Chronic Disease," "Chest Disease," "Congestion," "Exhaustion," "Female Disease," "Head Disease," "Neglect," "Private Disease," "Swelling Inside."

In many cases, such as "Fever," "Inflammation," "Tumor," "Cancer," the information would be more valuable if a little more were added, thus: "Inflammation of Bowels," "Ovarian Tumor," "Cancer of Womb," "Typhoid Fever," "Malarial Fever."

Valuable assistance will be rendered you in many instances if you will apply to the physicians practicing in your neighborhood, and request of them a list of births and deaths that have occurred in their practices, or have come to their knowledge otherwise, within your township or ward during the year 1902. A copy of this circular has been sent to physicians practicing in Michigan, so far as their addresses have been ascertained, and the request made of them that they give you what voluntary assistance they can extend, with the object of obtaining more complete and medically valuable returns. It is believed that your request for such information will meet with a cordial response in nearly every case. If, however, your request should be refused, then, in any particular death in which you cannot otherwise ascertain the facts, it is your duty, under section 864, Howell's Statutes, to call upon the physician, surgeon or midwife who has been in attendance upon the deceased person, for a certified statement, without fee, containing the name of the disease or cause (if known) producing the death of such person. And a refusal to give you such certified statement on your request subjects the physician so refusing to a fine which it is your duty to sue for, and collect under the statute.

In the tabular arrangement following there is given in the first column a list of the most common indefinite or otherwise unsatisfactory replies to "Cause of Death." In the second column are given (1) certain questions which should be asked by the collector of deaths when such indefinite answers are given, and (2) certain common forms of disease which will often enable the collector to make an exact return instead of an indefinite one. See "Lung Diseases," "Brain Diseases," in table for examples. These should be named over to the persons furnishing the information only in case they are unable to remember the disease or to give a definite reply otherwise, and it should be earnestly borne in mind that it is extremely undesirable to influence the nature of the returns by any preconceptions on the collector's part of the relative prevalence of different diseases. The third column contains directions for and examples of correct forms of returns.

In conclusion we would request every supervisor and assessor to read carefully this circular and to comply, as far as may be possible, with the suggestions and directions contained herein. Should any difficulties arise in the practical work of enumeration, a letter requesting information, addressed to this office, Division of Vital Statistics, will receive a prompt response.

Very respectfully,

JOHN W. JOCHIM,

Secretary of State.

TABULAR ARRANGEMENT TO ASSIST IN MAKING CORRECT RETURNS OF CERTAIN CAUSES OF DEATH.

CORRECT RETURNS OF CAUSES OF DEATH.

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1. Common indefinite returns.	2. Questions and common diseases.	3. Returns to be made.
ABCESS.....	Ask of what part of body and due to what injury or disease. After fevers? Pyæmia? Tubercular?	Return injury or disease causing abscess if known. If none be given, state what part of body was the seat of the abscess.
ALCOHOLISM, DRUNKENNESS, DELIRIUM TREMENS, DISSIPATION.....	Was death caused by alcohol or by acute disease intervening?	State disease causing death, unless intemperance was direct cause; then return accordingly.
AMPUTATION OR OTHER SURGICAL OPERATION.....	What limb or part of body? By what disease or injury was it required?	State disease or injury as "Cause of Death" giving operation as immediate cause.
CANCER.....	Of what organ or part of body?	Return as "Cancer of Breast," etc. If kind of cancer is stated by physician, give his statement.
CHRONIC DISEASE.....	What disease was it?	State name of disease.
COMPLICATION OF DISEASES.....	What killed the individual? And what disease led chiefly to that condition?	Answers to these questions should afford information sufficient to give a definite return.
COLD.....	Was it a lung disease? Was it freezing?	See disease of lungs. Report freezing.
CONGESTION.....	Of what organ, or in course of what disease?	Report "Congestion of Lungs," etc., according to reply. If inflammation of lungs, brain, etc., is really meant, report it as such.
CONVULSIONS, CRAMPS, FITS, SPASMS.....	In children often difficult to define. In adults, ask whether epileptic, from poisoning, uræmic, at child-birth.	"Infantile Convulsions" may be reported as "Cause of Death." In adults the disease causing the convulsions can generally be found and returned.
DEATHS FROM ACCIDENT, BURNING, DROWNING, GUN-SHOT, INJURIES, POISON, SUFFOCATION, ETC., ETC.....	Ask what parts injured. How? Gasoline stove? Lamp explosion? Burning of dwelling? Gas from stove? From open gas burner? In mine?	In general return manner in which death occurred and whether accidental, suicidal or homicidal. In death from poisoning the kind of poison should be stated.
DEBILITY, INFIRMITY, EXHAUSTION, WEAKNESS, GENERAL DEBILITY, NERVOUS PROSTRATION.....	These accompany many diseases but are not to be stated as "Cause of Death" alone if disease producing the condition can be ascertained.	
INFANT.....	Ask what disease of infants.	
OLD AGE.....	Too many cases are reported "old age," even from 80 to 70 years of age, when a little inquiry would often give the real cause of death.	

TABULAR ARRANGEMENT.—CONTINUED.

1. Common indefinite returns.	2. Questions and common diseases.	3. Returns to be made.
DISEASE, OR TROUBLE, OR COMPLAINT OF:	What particular disease? Obtain physicians certified statement if in doubt.	In all these cases it is hoped that an effort will be made to obtain the <i>name of the disease</i> . The aid of the physician who attended the case will often be essential in making a correct return. In case it is impossible to obtain the exact name of the disease then a return specifying the part affected possesses a certain value and should be made in preference to filling the blank with "Unknown." Thus "Disease of Brain," "Kidney Disease," should be given when, and only when, the particular disease of brain or kidneys cannot be ascertained.
—BLOOD	Was it blood poisoning (septic fever, septicaemia)? Was it syphilis?	
—BOWELS	Was it diarrhea? Dysentery? Cholera morbus? Cholera infantum (summer complaint of children)? Asiatic cholera? Inflammation? Obstruction? Gangrene? Ulceration? Cancer? Tubercular or syphilitic disease? (Diseases of Stomach and Liver are elsewhere referred to.)	
—BRAIN	Was it apoplexy (hemorrhage in vessels of brain)? Meningitis? General paralysis of the insane? Some form of insanity? Softening of the brain? Hydrocephalus (water or dropsey on brain)?	
—BREAST	Was it cancer?	
—CHEST	Was it a lung disease?	
—FEMALES	Obtain statement of physician if in doubt.	
—HEART	Obtain statement of physician if in doubt. See also note on "Heart Failure" below.	
—KIDNEYS	Was it acute inflammation? Following scarlet fever? Some form of Bright's disease? Ask physician who attended if necessary.	
—LIVER	Obtain statement of physician if needed.	
—LUNGS	Was it pneumonia? Bronchitis? Consumption? Hemorrhage of lungs from consumption? Obtain statement of physician if in doubt.	
—STOMACH	Was it cancer? Ulcer?	
—WOMB	Was it cancer? Fibroid tumor? Obtain the attending physician's statement if unable to obtain facts.	
DROPPY	Was it caused by heart disease? Bright's disease of the kidneys? Disease of the liver or ovaries? A physician's aid will be very useful in making returns correctly.	

Return "Dropsey from Heart Disease," etc. See note at end of this table.

TABULAR ARRANGEMENT.—CONCLUDED.

1. Common indefinite returns.	2. Questions and common diseases.	3. Returns to be made.
ERUPTION.....	Of what nature? Eczema (Salt Rheum)? Erysipelas? Of scarlet fever? Measles? Syphilis?	Give name of disease as stated, preferably, by physician.
FEVER.....	What fever was it? Typhoid? Malarial? Scarlet fever, etc.	State name of fever.
HEMORRHAGE.....	From what organ or part? (See diseases of brain and lungs.) "Flooding" in child-birth?	State source and condition causing, if known. Return as such.
HEART FAILURE.....	Was it after scarlet fever, typhoid fever, influenza, diphtheria or other acute disease? Was it heart disease? In exhaustion from chronic disease? See note at end of table.	Return disease causing "heart failure."
INFLAMMATION.....	Of what organ or part?	Return as specified.
INFLUENZA, LA GRIFFE.....	What caused death? Pneumonia? Bronchitis? Pleurisy?	Many cases may be correctly reported as due to "Pneumonia following influenza," etc. Where this was true it is better than merely to give influenza as "(Cause of Death" with no explanation of mode of death.
PARALYSIS, PALSY.....	Was it paralysis agitans (shaking palsy, creeping palsy)? Did it follow a "stroke" of apoplexy? Was it caused by poisons or otherwise?	State form and cause when known.
PERITONITIS.....	What caused it? Puerperal peritonitis (child-bed fever)?	If abortion or miscarriage set up the peritonitis, return should say so. Return still-births in <i>Births</i> as well as in <i>Deaths</i> .
STILL-BORN.....	A still-born child is one born dead. For one that lives any time after birth another "Cause of Death" should be given. By instrumental delivery? Otherwise.....	Report as stated. Report as such.
INJURY AT BIRTH.....	See death from drowning, gun-shot, etc.	
PREMATURE BIRTH.....	Of what part? Was it a cancer? Ovarian tumor?	Specify part. Return as Cancer if so stated.
SUICIDE, KILLED, MURDERED.....	Of what part? Caused by what disease?	Return disease causing condition if known.
TUMOR.....	See deaths from accident, etc.	
ULCER.....		
WOUNDS.....		

NOTE.—Besides the suggestions made above there are two Causes of Death reported so frequently as to make needful a special word. These are "Dropsy" and "Heart Failure." Dropsy is a symptom in many diseases. The heart always fails at death. It is therefore important to say what diseases caused these conditions. Thus "Dropsy from Bright's Disease," "Heart Failure from Heart Disease," "Heart Failure after Typhoid Fever," "after influenza," or "following Diphtheria," are much more valuable statements than the mere facts that the body was swollen and the heart failed before death.

SPECIAL NOTICE.

To the Physicians of Michigan:

The law providing for the yearly enumeration of births and deaths in Michigan by supervisors and assessors, imposes certain specific duties upon the medical profession of the State in regard to furnishing a certified statement of the "Disease or Cause of Death" of any deceased person upon whom any physician, surgeon or midwife may have been in attendance. (See instructions to supervisors and assessors in enclosed circular, and also section 864, Howell's Annotated Statutes, printed on last page of same.)

The annual registration of deaths in Michigan has been very defective in that it has contained an unduly large percentage of deaths returned, or necessarily compiled, as due to "Unknown" Cause of Death. The "Tabular Arrangement" contained in the Circular of Instructions will indicate why many returns are made of such a vague and indefinite character as to make them worthless for purposes of compilation and subsequent scientific study.

It is believed that the remedy for this deficiency, so far as any attempt at a more accurate and valuable registration is practicable under the present law, lies in the interested and intelligent co-operation of the medical profession of the State with those to whom is intrusted the work of enumeration.

Valuable assistance can be given in two ways: First, the certified statements as to Cause of Death can be promptly and carefully furnished to the enumerators on their request under the law, and, second, if each physician will prepare a list of the births and deaths (with cause of death) in his practice or coming under his observation, in his township or ward, during the preceding calendar year, and hand the same to the enumerator, not only will the value of the deaths returned be enhanced, but also, it is believed, a larger and more accurate registration will result.

The importance of "Medical Statistics" and the necessity of having a full and reliable *Vital Record* of the State, need not be impressed upon physicians. "Such records are the absolutely necessary foundation for well directed attempts to improve the health and lengthen the life of the people,"* and the standing of Michigan among the states in the line of sanitary and social progress, is well marked by them.

Believing that the cordial co-operation of the medical profession will be extended to this important work, I am,

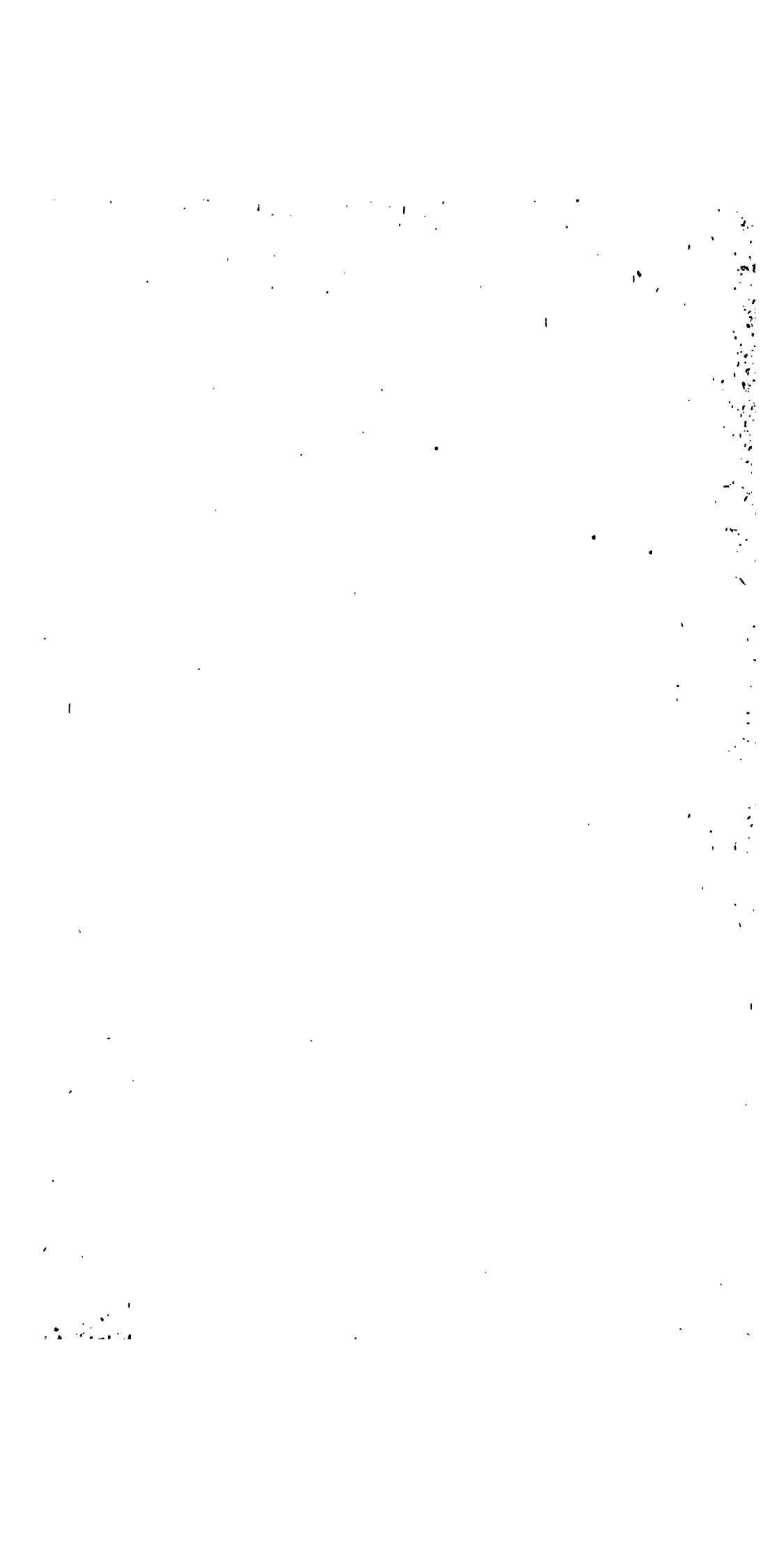
Very respectfully,

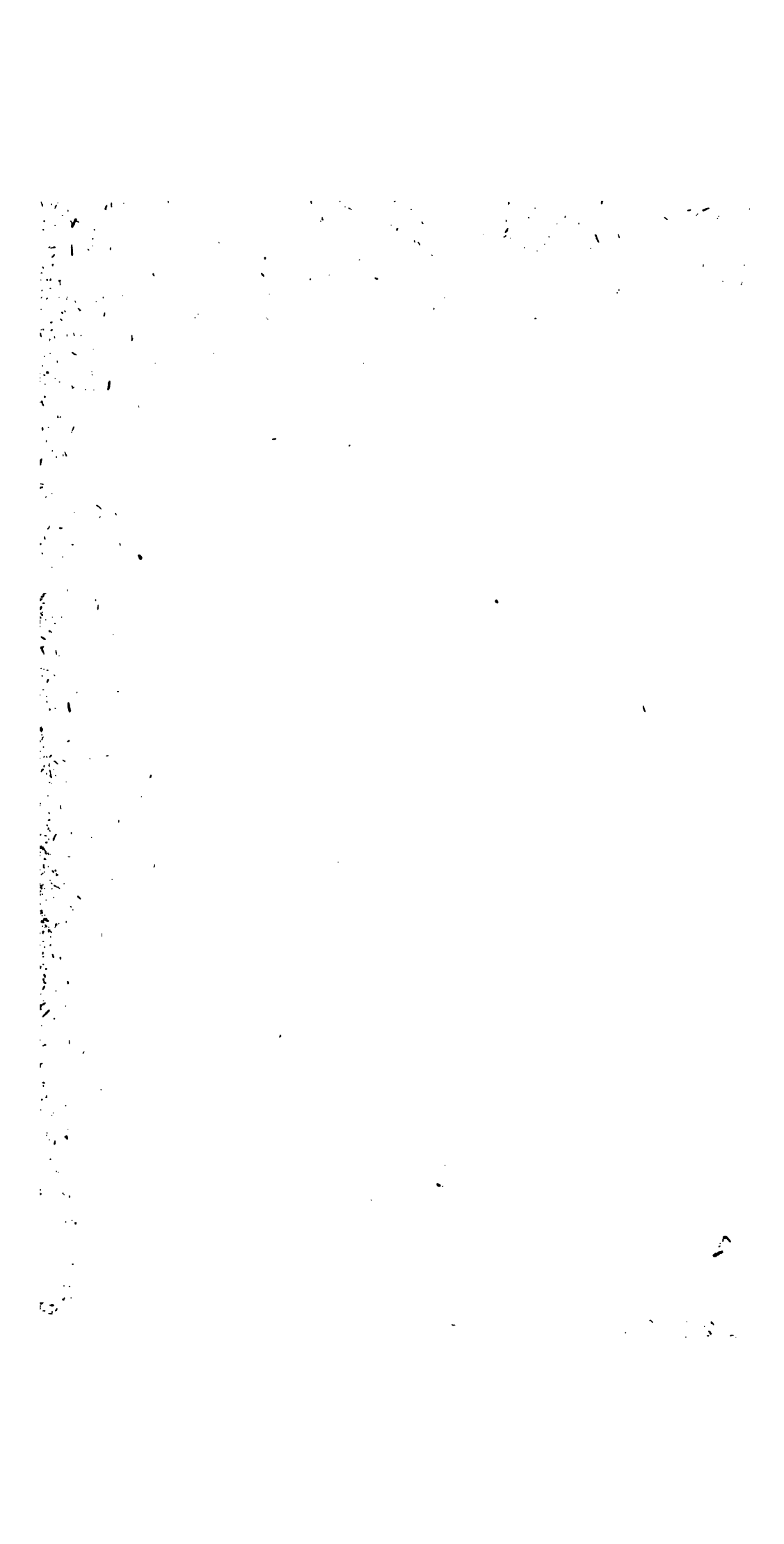
JOHN W. JOCHIM,

Secretary of State.

April 10, 1893.

* Hon. Robert P. Porter, Compendium Eleventh United States Census, 1892, Part I, p. xx.









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